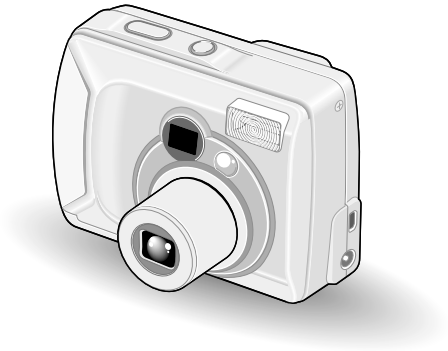
FILE NO.

SANYO

SERVICE MANUAL

Digital Camera



VPC-S4

(Product Code : 126 678 00)
(Europe)
(PAL General)

VPC-S4U

(Product Code : 126 678 01)
(U.S.A.)
(Canada)
(Korea)
(Taiwan)

Contents

1. OUTLINE OF CIRCUIT DESCRIPTION 2
2. DISASSEMBLY 10
3. ELECTRICAL ADJUSTMENT 12
4. USB STORAGE INFORMATION REGISTRATION 17
5. TROUBLESHOOTING GUIDE 18
6. PARTS LIST 19
   ACCESSORIES 19
   PACKING MATERIALS 19
   CABINET & CHASSIS PARTS 1 20
   CABINET & CHASSIS PARTS 2 21
   ELECTRICAL PARTS 22

CIRCUIT DIAGRAMS & PRINTED WIRING BOARDS C1

PRODUCT SAFETY NOTICE

The components designated by a symbol (⚠) in this schematic diagram designates components whose value are of special significance to product safety. Should any component designated by a symbol need to be replaced, use only the part designated in the Parts List. Do not deviate from the resistance, wattage, and voltage ratings shown.

CAUTION : Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.
Discard used batteries according to the manufacturer's instructions.

NOTE : 1. Parts order must contain model number, part number, and description.
2. Substitute parts may be supplied as the service parts.
3. N. S. P. : Not available as service parts.

Design and specification are subject to change without notice.

1. OUTLINE OF CIRCUIT DESCRIPTION

1-1. CP1 CIRCUIT DESCRIPTION

1. IC Configuration

IC903 (MN39483PJJ)	CCD imager
IC901 (AN20101A)	V driver
IC906 (AD9948KCPZ)	CDS, AGC, A/D converter

2. IC903 (CCD)

[Structure]

Interline type CCD image sensor

Optical size	1/2.5 type format
Effective pixels	2336 (H) X 1744 (V)
Pixels in total	2408 (H) X 1758 (V)
Optical black	
Horizontal (H) direction:	Front 16 pixels, Rear 56 pixels
Vertical (V) direction:	Front 11 pixels, Rear 3 pixels
Dummy bit number	Horizontal : 28 Vertical :1

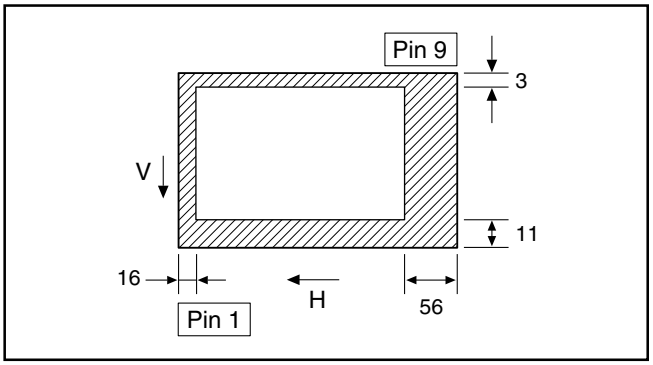


Fig. 1-1.Optical Black Location (Top View)

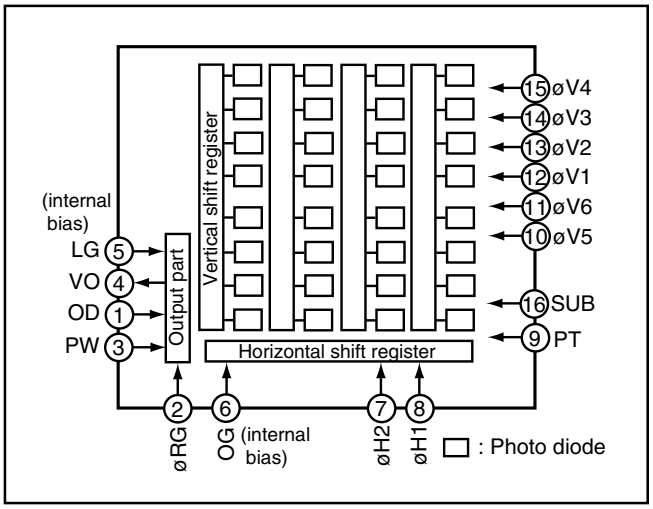


Fig. 1-2. CCD Block Diagram

Pin No.	Symbol	Pin Description	Waveform	Voltage
1	V_6	Vertical register transfer clock		-8.0 V, 0 V
2, 3, 8	V_{5A}, V_{5B}, V_1	Vertical register transfer clock		-8.0 V, 0 V, 12 V
4, 7	V_2, V_4	Vertical register transfer clock		-8.0 V, 0 V
5, 6	V_{3A}, V_{3B}	Vertical register transfer clock		-8.0 V, 0 V, 12 V
7	OG	Output gate	DC	1.4 V
9	VO	Signal output	DC	Aprox. 12 V
10	OD	Circuit power	DC	15 V
11	ØR	Reset gate clock		12.5 V, 16 V
12	PW	GND	GND	0 V
13	PT	Protection transister bias	DC	-8.0 V
14	SUBC	Substrate control		0, 3.3 V (When importing all picture element: 3.3 V)
15	SUB	Substrate clock	DC	Aprox. 6 V (Different from every CCD)
16, 17	H_L, H_1	Horizontal register transfer clock		0 V, 3.5 V
18	H_2	Horizontal register transfer clock		0 V, 3.5 V

Table 1-1. CCD Pin Description

---- When sensor read-out

3. Part of IC906 (H Driver) and IC901 (V Driver)

An H driver (part of IC906) and V driver (IC901) are necessary in order to generate the clocks (vertical transfer clock, horizontal transfer clock and electronic shutter clock) which driver the CCD.

IC906 has the generation of horizontal transfer clock and the function of H driver, and is an inverter IC which drives the horizontal CCDs (H1 and H2). In addition the XV1-XV4 signals which are output from IC101 are the vertical transfer clocks, and the XSG signal which is output from IC101 is superimposed onto XV1 and XV3 at IC901 in order to generate a ternary pulse. In addition, the XSUB signal which is output from IC101 is used as the sweep pulse for the electronic shutter, and the RG signal which is output from IC906 is the reset gate clock.

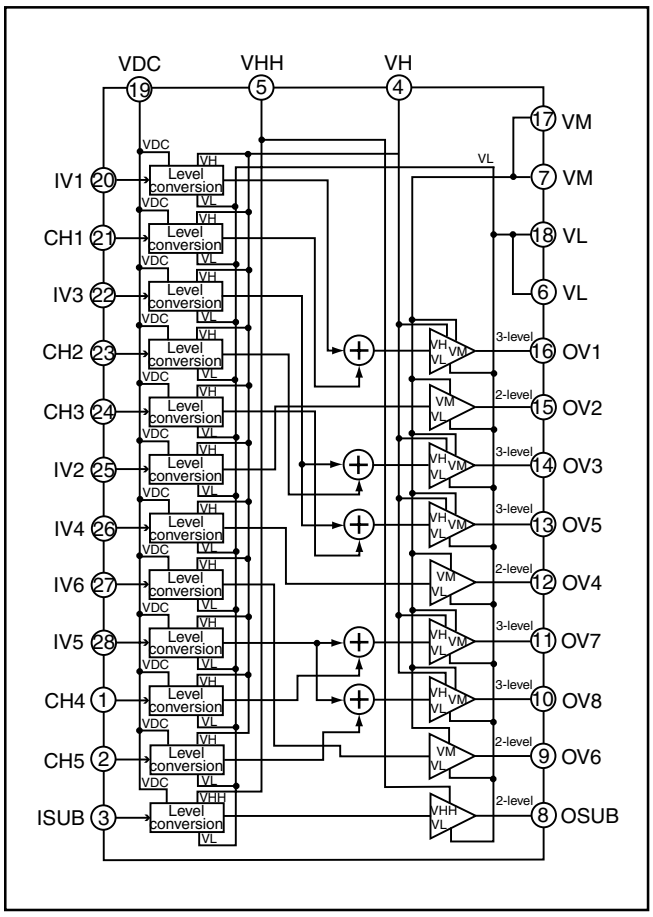


Fig. 1-3. IC901 Block Diagram

4. IC906 (H Driver, CDS, AGC and A/D converter)

IC906 contains the functions of H driver, CDS, AGC and A/D converter. As horizontal clock driver for CCD image sensor, HØ1 (A and B) and HØ2 (A and B) are generated inside, and output to CCD.

The video signal which is output from the CCD is input to pins (27) of IC906. There are sampling hold blocks generated from the SHP and SHD pulses, and it is here that CDS (correlated double sampling) is carried out.

After passing through the CDS circuit, the signal passes through the AGC amplifier (VGA: Variable Gain Amplifier). It is A/D converted internally into a 10-bit signal, and is then input to ASIC (IC101). The gain of the VGA amplifier is controlled by pin (31)-(33) serial signal which is output from ASIC (IC101).

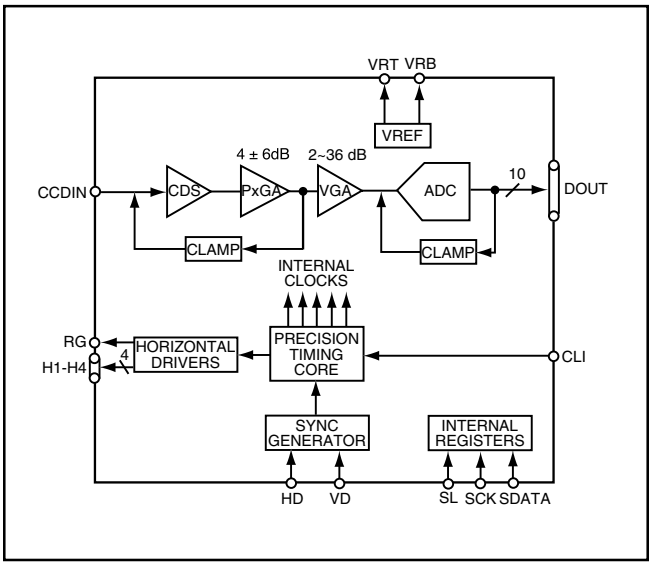


Fig. 1-4. IC906 Block Diagram

5. Lens drive block

5-1. Shutter drive

The shutter drive signal (SIN1 and SIN2) which is output from the ASIC expansion port (IC106) is drived the shutter constant level driver (IC951), and then shutter plunger is opened and closed.

5-2. Iris drive

The iris stepping motor drive signals (IIN1 and IIN2) which are output from the ASIC (IC101) are used to drive by the motor driver (IC951).

5-3. Focus drive

The focus stepping motor drive signals (FIN1, FIN2, FIN3 and FIN4) which are output from the ASIC (IC101) are used to drive by the motor driver (IC951). Detection of the standard focusing positions is carried out by means of the photointerruptor (FPI-E) inside the lens block.

5-4. Zoom drive

The zoom DC motor drive signals (ZIN1 and ZIN2) which are output from the ASIC (IC101) are used to drive by the motor driver (IC951). Detection of the zoom positions is carried out by means of photoreflector (ZPI-E) inside the lens block.

6. Circuit description

6-1. Digital clamp

The optical black section of the CCD extracts averaged values from the subsequent data to make the black level of the CCD output data uniform for each line. The optical black section of the CCD averaged value for each line is taken as the sum of the value for the previous line multiplied by the coefficient k and the value for the current line multiplied by the coefficient (k-1).

6-2. Signal processor

1. γ correction circuit

This circuit performs (gamma) correction in order to maintain a linear relationship between the light input to the camera and the light output from the picture screen.

2. Color generation circuit

This circuit converts the CCD data into RGB signals.

3. Matrix circuit

This circuit generates the Y signals, R-Y signals and B-Y signals from the RGB signals.

4. Horizontal and vertical aperture circuit

This circuit is used gemerate the aperture signal.

6-3. AE/AWB and AF computing circuit

The AE/AWB carries out computation based on a 256-segment screen, and the AF carries out computations based on a 11-segment screen.

6-4. SDRAM controller

This circuit outputs address, RAS, CAS and AS data for controlling the SDRAM. It also refreshes the SDRAM.

6-5. Communication control

1. SIO

This is the interface for the 8-bit microprocessor.

2. PIO/PWM/SIO for LCD

8-bit parallel input and output makes it possible to switch between individual input/output and PWM input/output. It is prepared for 16-bit parallel output.

6-6. TG/SG

Timing generated for 4 million pixel CCD control.

6-7. Digital encorder

It generates chroma signal from color difference signal.

6-8. JPEG encorder and decorder

It is compressed and elongated the data by JPEG system.

7. Outline of Operation

When the shutter opens, the reset signals and the serial signals (“take a picture” commands) from the 8-bit microprocessor are input to ASIC (IC101) and operation starts. When the TG/SG drives the CCD, picture data passes through the A/D and CDS, and is then input to the ASIC as 12-bit data. The AF, AE, AWB, shutter, and AGC value are computed from this data, and three exposures are made to obtain the optimum picture. The data which has already been stored in the SDRAM is read by the CPU and color generation is carried out. Each pixel is interpolated from the surrounding data as being either R, G and B primary color data to produce R, G and B data. At this time, correction of the lens distortion which is a characteristic of wide-angle lenses is carried out. After AWB and γ processing are carried out, a matrix is generated and aperture correction is carried out for the Y signal, and the data is then compressed by the JPEG method by (JPEG) and is then written to card memory (SD card).

When the data is to be output to an external device, it is taken data from the memory and output via the USB. When played back on the LCD and monitor, data is transferred from memery to the SDRAM, and the data elongated by JPEG decorder is displayed over the SDRAM display area.

8. LCD Block

LCD block is in the CP1 board, and it is constructed by VCOM generation circuit etc.

The video signal from the ASIC are 6-bit digital signal, and input to LCD directly. It is converted into RGB signals at driver circuit in the LCD.

The VCOM (common polar voltage: AC) and the R, G and B signals becomes greater, the display becomes darker; if the difference in potential is smaller, the element opens and the LCD become brighter. And also the timing pulse except the video signal is input to LCD directly from ASIC.

1-2. CP1 POWER CIRCUIT DESCRIPTION

1. Outline

This is the main power circuit, and is comprised of the following blocks.
Switching controller (IC501)
Analog system power output (T5001, Q5001, IC502)
Digital 3.25 V power output (L5004)
Digital 1.7 V power output (L5005)
5 V system power output (L5003, Q5009)
LCD 15 V system power output (L5001, Q5002)
Backlight power output (L5002)
Motor system power output (IC955, L9551, Q9551)

2. Switching Controller (IC501)

This is the basic circuit which is necessary for controlling the power supply for a PWM-type switching regulator, and is provided with seven built-in channels, only CH2 (digital 3.25 V), CH3 (digital 1.7 V), CH4 (digital system), CH5 (analog system), CH6 (LCD system) and CH7 (backlight sysetm) are used. Feedback from 3.25 V (D) (CH2), 1.7 V (D) (CH3), digital system (CH4), analog system (CH5), LCD system (CH6) and backlight system (CH7) power supply outputs are received, and the PWM duty is varied so that each one is maintained at the correct voltage setting level.
Feedback for the backlight power (CH7) is provided to the both ends voltage of registance so that regular current can be controlled to be current that was setting.

2-1. Short-circuit Protection Circuit

If output is short-circuited for the length of time setting inside (Pin (42) of IC501), all output is turned off. The control signal (P ON) are recontrolled to restore output.

3. Analog System Power Output

+12 V (A), +3.45 V (A) and -8.0 V (A) are output. Feedback for the 13 V (+12 V (A)) is provided to the switching controller (Pin (53) of IC501) so that PWM control can be carried out. +3.45 V (A) is output which dropped 3.4 V by 5V system power output at regulator IC502.

4. Digital 3.25 V Power Output

+3.25 V (D) is output. Feedback for the +3.25 V (D) is provided to the switching controller (Pins (32) of IC501) so that PWM control can be carried out.

5. Digital 1.7 V Power Output

+1.7 V (D) is output. Feedback for the +1.7 V (D) is provided to the swiching controller (Pin (31) of IC501) so that PWM control can be carried out.

6. 5 V System Power Output

+5 V is output. Feedback for the +5 V is provided to the swiching controller (Pin (52) of IC501) so that PWM control can be carried out.

7. LCD System Power Output

+15 V (L) and 5 V (L) are output. Feedback for the +15 V (L) is provided to the swiching controller (Pin (56) of IC501) so that PWM control can be carried out.

8. Backlight Power Output

Regular current is being transmitted to LED for LCD backlight. Feedback for the both ends voltage of registance that is being positioned to in series LED are provided to the switching controller (Pin (48) of IC501) so that PWM control to be carried out.

9. Motor System Power Output

3.7 V is output. Feedback for the 3.7 V is provided to (Pin (1) of IC955) so that PWM control can be carried out.

1-3. ST1 STROBE CIRCUIT DESCRIPTION

1. Charging Circuit

When UNREG power is supplied to the charge circuit and the CHG signal from microprocessor becomes High (3.3 V), the charging circuit starts operating and the main electorolytic capacitor is charged with high-voltage direct current.
However, when the CHG signal is Low (0 V), the charging circuit does not operate.

1-1. Power switch

When the CHG signal switches to Hi, Q5407 turns ON and the charging circuit starts operating.

1-2. Power supply filter

C5401 constitutes the power supply filter. They smooth out ripples in the current which accompany the switching of the oscillation transformer.

1-3. Oscillation circuit

This circuit generates an AC voltage (pulse) in order to increase the UNREG power supply voltage when drops in current occur. This circuit generates a drive pulse with a frequency of approximately 50-100 kHz. Because self-excited light omission is used, the oscillation frequency changes according to the drive conditions.

1-4. Oscillation transformer

The low-voltage alternating current which is generated by the oscillation control circuit is converted to a high-voltage alternating current by the oscillation transformer.

1-5. Rectifier circuit

The high-voltage alternating current which is generated at the secondary side of T5401 is rectified to produce a high-voltage direct current and is accumulated at electrolytic capacitor C5412.

1-6. Voltage monitoring circuit

This circuit is used to maintain the voltage accumulated at C5412 at a constance level.
After the charging voltage is divided and converted to a lower voltage by R5417, R5419 and R5420, it is output to the microprocessor as the monitoring voltage VMONIT. When this VMONIT voltage reaches a specified level at the microprocessor, the CHG signal is switched to Low and charging is interrupted.

2. Light Emission Circuit

When RDY and TRIG signals are input from the ASIC expansion port, the stroboscope emits light.

2-1. Emission control circuit

When the RDY signal is input to the emission control circuit, Q5409 switches on and preparation is made to let current flow to the light emitting element. Moreover, when a STOP signal is input, the stroboscope stops emitting light.

2-2. Trigger circuit

When a TRIG signal is input to the trigger circuit, D5405 switches on, a high-voltage pulse of several kilovolts is generated inside the trigger circuit, and this pulse is then applied to the light emitting part.

2-3. Light emitting element

When the high-voltage pulse form the trigger circuit is applied to the light emitting part, currnet flows to the light emitting element and light is emitted.

Beware of electric shocks.

1-4. SYA CIRCUIT DESCRIPTION

1. Configuration and Functions

For the overall configuration of the SYA block, refer to the block diagram. The SYA block centers around a 8-bit microprocessor (IC301), and controls camera system condition (mode).
The 8-bit microprocessor handles the following functions.
1. Operation key input, 2. Clock control and backup, 3. Power ON/OFF, 4. Storobe charge control, 5. Signal input and output for zoom and lens control.

Pin	Signal	I/O	Outline
1	BATTERY	I	Battery voltage detection
2	VMONIT	I	Main capacitor charge voltage detection
3	SCAN IN5	I	Key matrix input
4	COMREQ	I	Command request
5	SCAN IN1	I	Key matrix input
6	SCAN IN2	I	Key matrix input
7	SCAN IN3	I	Key matrix input
8	SCAN IN4	I	Key matrix input
9	AVSS	-	GND
10	LED. VF	O	VF LED (H = Lighting)
11	SCAN OUT2	O	Key matrix output
12	BAT_OFF	I	Battery off detection signal input
13	SREQ	I	Serial communication requirement signal
14	CHG ON	O	Strobe charge control
15	SCAN IN0	I	Key matrix input
16	SCK/PRG SCK	O	Serial clock output/serial clock output for flash
17	VDD	I	VDD
18	SO/PRG SO	O	Serial data output/serial data output for flash
19	SI/PRG SI	I	Serial data input/serial data input for flash
20	SCAN OUT1	O	Key matrix output
21	SCAN OUT0	O	Key matrix output
22	IC	-	Power for program writing
23	XCOUT	O	Clock oscillation terminal
24	XCIN	I	Clock oscillation terminal (32.768 kHz)
25	RESET	I	Reset input
26	XOUT	O	Main clock oscillation terminal
27	XIN	I	Main clock oscillation terminal (4 MHz)
28	VSS	-	GND
29	VDD	I	VDD
30	PA ON2	O	D/D converter (analog system) ON/OFF signal 2
31	LCD ON2	O	D/D converter (LCD system) ON/OFF signal 2
32	P ON	O	D/D converter (digital system) ON/OFF signal
33	PA ON	O	D/D converter (analog system) ON/OFF signal
34	LCD ON	O	D/D converter (LCD system) ON/OFF signal
35	BL ON	O	Backlight ON/OFF
36	LCD ON3	O	D/D converter (LCD system) ON/OFF signal 3
37	VSS	-	GND
38	PLLEN	O	PLL oscilllation ON/OFF
39	MAIN RESET	O	System reset (MRST)
40	AVREF ON	O	AD VREF ON/OFF signal
41	ASIC TEST	O	ASIC control signal (ZTEST)

See next page

42	BACKUP CTL	O	Backup battery charge control
43	AVDD	I	VDD
44	AVREF	I	Analog standard voltage input terminal

Table 4-1. 8-bit Microprocessor Port Specification

2. Internal Communication Bus

The SYA block carries out overall control of camera operation by detecting the input from the keyboard and the condition of the camera circuits. The 8-bit microprocessor reads the signals from each sensor element as input data and outputs this data to the camera circuits (ASIC) or to the LCD display device as operation mode setting data. Fig. 4-1 shows the internal communication between the 8-bit microprocessor and ASIC.

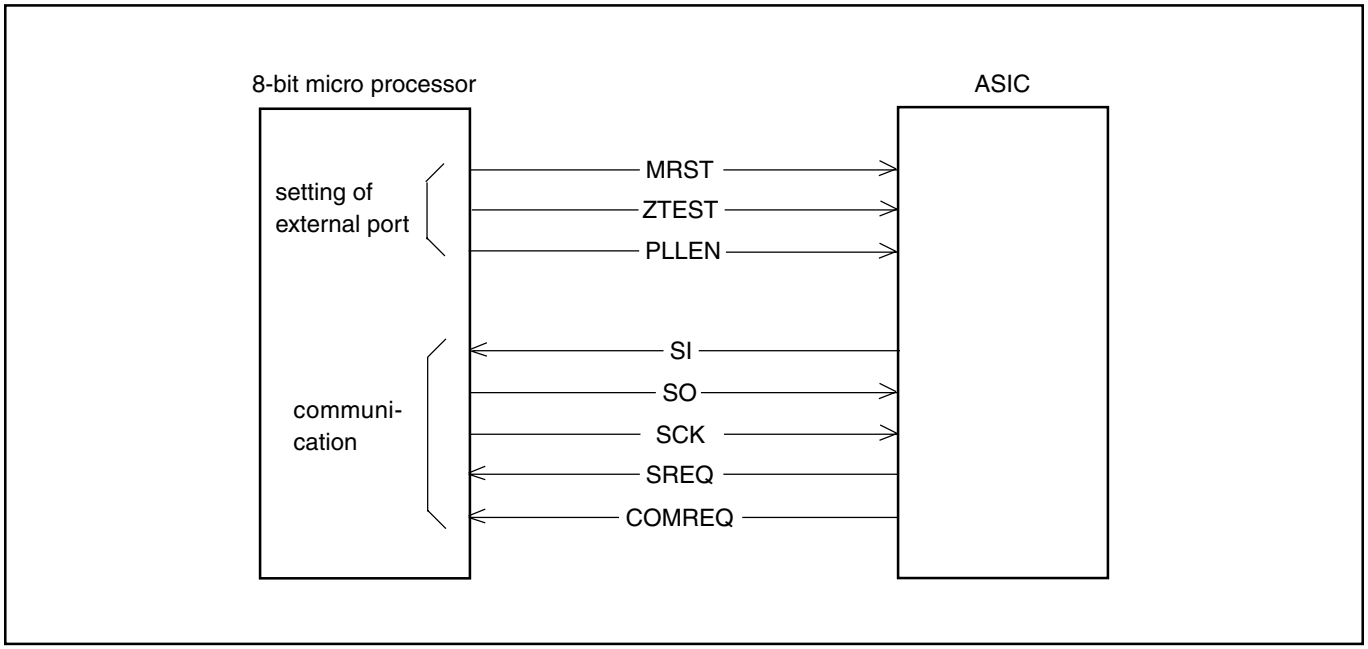


Fig. 4-1 Internal Bus Communication System

3. Key Operaiton

For details of the key operation, refer to the instruction manual.

SCAN OUT \ SCAN IN	0	1	2	3	4	5
0	SET	DC_IN		PLAY	VF	REC
1	UP	DOWN	RIGHT	LEFT	CARD	USB_CONNECT
2	PW_ON	S1	S2	TELE	WIDE	MENU

Table 4-2. Key Operation

4. Power Supply Control

The 8-bit microprocessor controls the power supply for the overall system.

The following is a description of how the power supply is turned on and off. When the battery is attached, IC955 is operating and creating 3.6 V, a regulated 3.2 V voltage is normally input to the 8-bit microprocessor (IC301) by IC302, clock counting and key scanning is carried out even when the power switch is turned off, so that the camera can start up again.

When the power switch is off, the 8-bit microprocessor halts 4 MHz of the main clock, and operates 32.768 kHz of subclock.

When the battery is removed, the 8-bit microprocessor power switches the lithum secondary battery for memory backup by IC302, and operates at low consumption. At this condition, the 8-bit microprocessor halts the main clock, and operates clock counting by sub clock.

Also, the battery for backup is charged 10 hours from it to be attached.

When the power switch is on, the 8-bit microprocessor starts processing. The 8-bit microprocessor first sets both the PON signal at pin (32) and the PAON signal at pin (33) to High, and then turn on the power circuit. After PON signal is to High, sets external port of ASIC after approximately 100 ms. According to setting of this external port, carry out setting of the operating frequency and oscillation control in the ASIC. Also, it starts communication with ASIC, and confirms the system is operative.

When the through image is operating, set the PAON signal to High and then turn on the CCD. When the through image is playing, set the PAON signal to Low and then turn off the CCD. When LCD panel turns on, set LCD ON signal at pin (34), LCD ON2 signal at pin (31) and LCD ON3 signal at pin (36) to High, and then turn on the power. Set LCD BL signal at pin (35) to High, and turn on the backlight power.

When the power switch is off, the lens will be stowed, and PON, PAON, LCDON and BLON signals to Low and the power supply to the whole system is halted. The 8-bit microprocessor halts oscillation of the main clock, and set operation mode of clock ocillation.

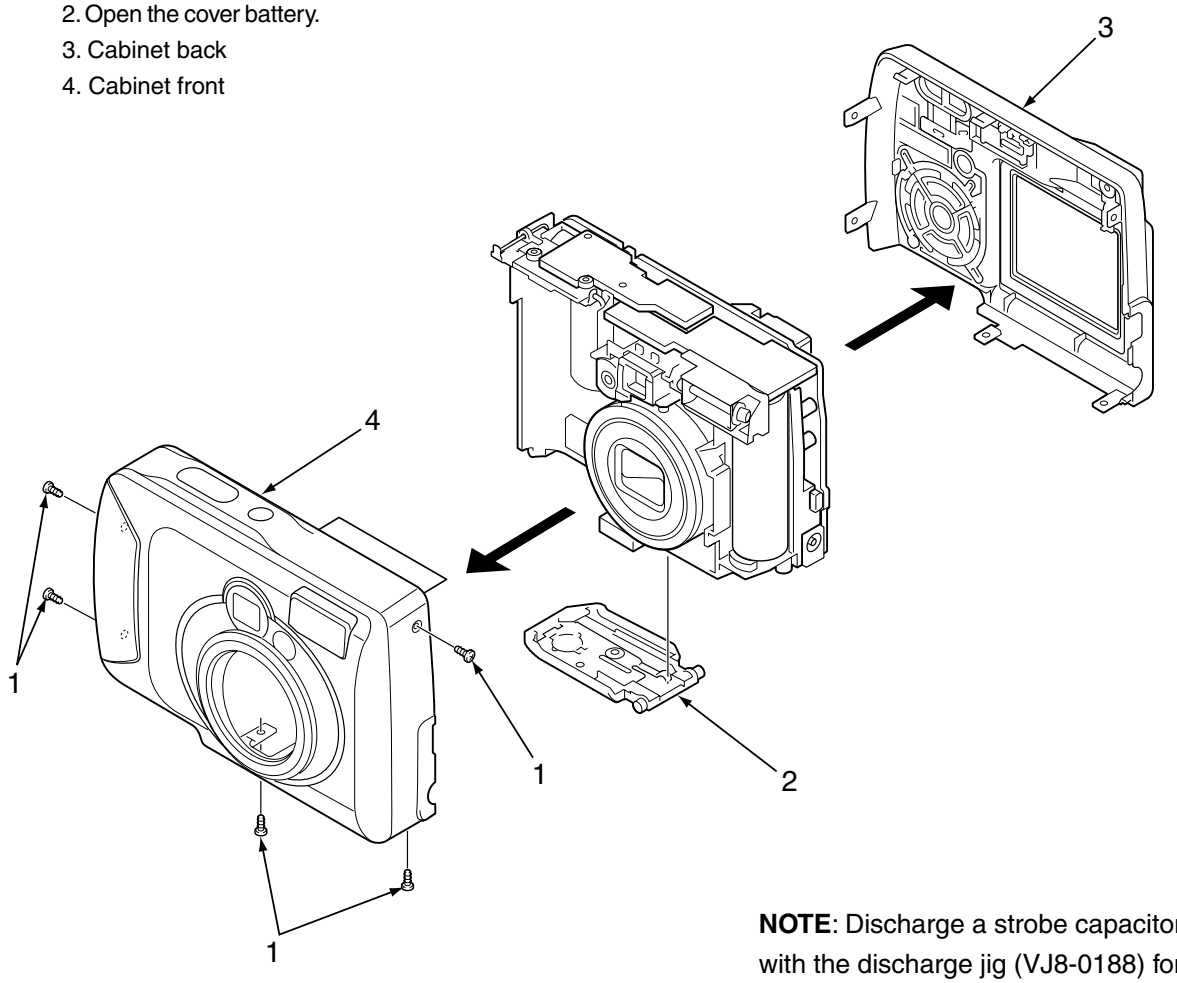
	ASIC, memory	CCD	8bit CPU	LCD MONITOR
Power supply voltage	1.70 V, 3.25 V	12 V, -8 V 3.45 V	3.2 V	15 V, 5.0 V
Power OFF	OFF	OFF	32KHz	OFF
Playback mode	ON	OFF	4MHz	ON
Shooting mode (LCD)	ON	OFF	4MHz	ON
Shooting mode (OVF)	OFF	OFF	4MHz	OFF
Shooting	ON	ON	4MHz	ON
USB connection	ON	OFF	4MHz	OFF

Table 4-3. Power supply control

2. DISASSEMBLY

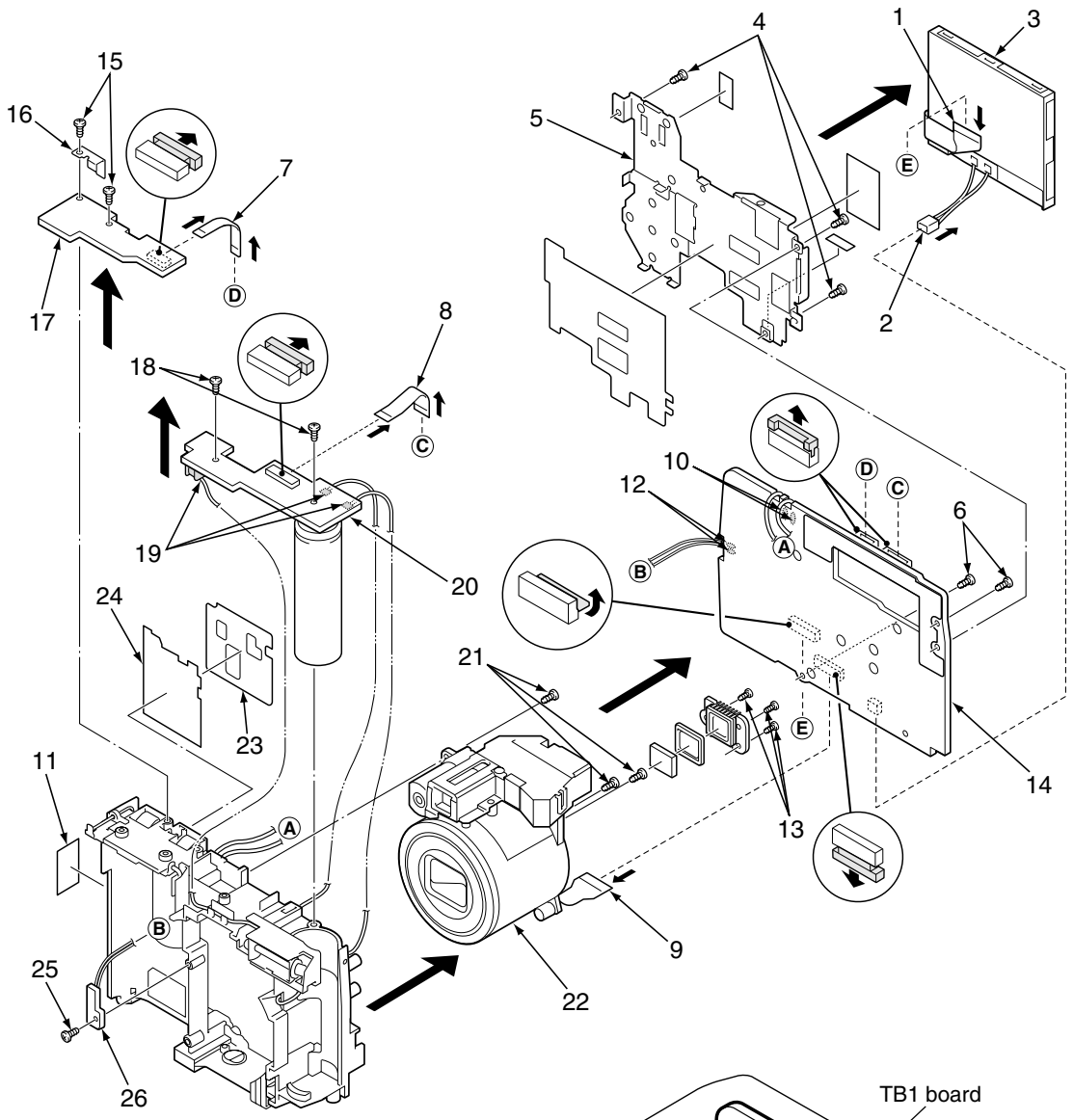
2-1. REMOVAL OF CABINET BACK AND CABINET FRONT

1. Five screws 1.7 x 4.5
2. Open the cover battery.
3. Cabinet back
4. Cabinet front

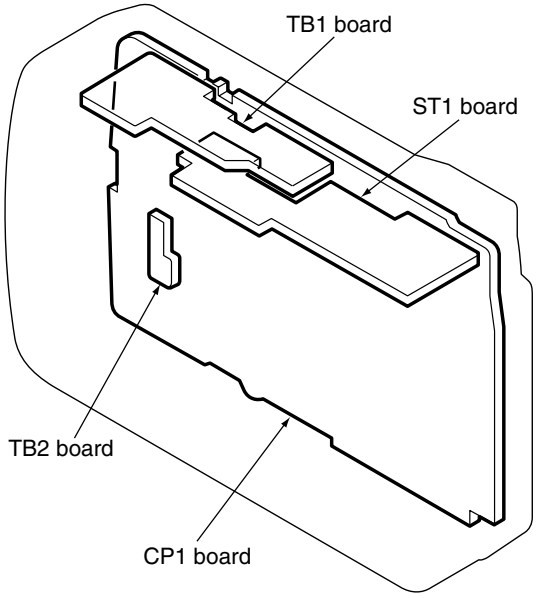


NOTE: Discharge a strobe capacitor with the discharge jig (VJ8-0188) for electric shock prevention.

2-2. REMOVAL OF LCD, CP1 BOARD, TB1 BOARD, ST1 BOARD, LENS ASSEMBLY, TB2 BOARD AND BOARD LOCATION



1. FPC
2. Connector
3. LCD
4. Three screws 1.7 x 4
5. Holder monitor
6. Two screws 1.7 x 4
7. FPC
8. FPC
9. FPC
10. Remove the solder.
11. Spacer TB2
12. Remove the solder.
13. Three screws 1.6 x 3.5
14. CP1 board
15. Two screws 1.7 x 4
16. Earth plate
17. TB1 board
18. Two screws 1.7 x 4
19. Remove the solder.
20. ST1 board
21. Three screws 1.7 x 4
22. Lens assembly
23. Spacer fuse up
24. Spacer fuse
25. Screw 1.7 x 4
26. TB2 board

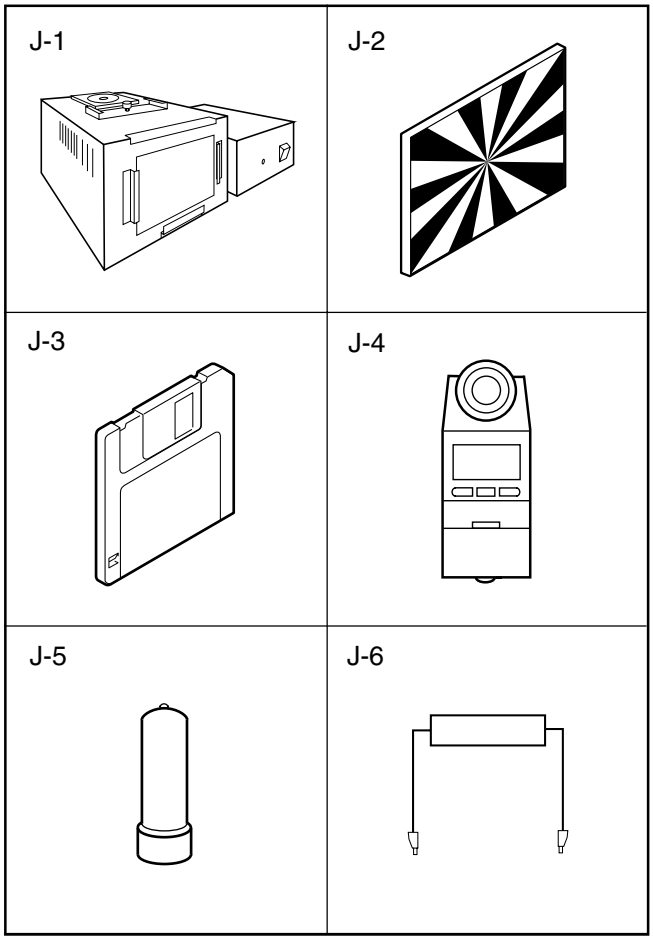


3. ELECTRICAL ADJUSTMENT

3-1. Table for Servicing Tools

Ref. No.	Name	Number	Part code
J-1	Pattern box (color viewer)	1	VJ8-0190
J-2	Siemens star chart	1	
J-3	Calibration software	1	VJ8-0237
J-4	Chroma meter	1	VJ8-0192
J-5	Spare lump	1	VJ8-0191
J-6	Discharge jig	1	VJ8-0188

Note: J-1 Pattern box (color viewer) is 100 - 110 VAC only.



3-2. Equipment

1. Oscilloscope
2. Digital voltmeter
3. AC adaptor
4. PC (IBMⓇ-compatible PC, Pentium processor, Window 98 or Me or 2000 or XP)

3-3. Adjustment Items and Order

1. IC501 Oscillation Frequency Adjustment
2. Lens Adjustment
3. AWB Adjustment
4. CCD White Point Defect Detect Adjustment
5. CCD Black Point And White Point Defect Detect Adjustment In Lighted
6. LCD Panel Adjustment
   6-1. LCD VcomPP Adjustment
   6-2. LCD VcomDC Adjustment

Note: If the lens, CCD and board in item 2-5, it is necessary to adjust again. Item 2-4 adjustments should be carried out in sequence. Item 5 adjustment should be carried out after item 3.

3-4. Setup

1. System requirements

Windows 98 or Me or 2000 or XP
IBMⓇ-compatible PC with pentium processor
CD-ROM drive
3.5-inch high-density diskette drive
USB port
40 MB RAM
Hard disk drive with at least 15 MB available
VGA or SVGA monitor with at least 256-color display

2. Installing calibration software

1. Insert the calibration software installation diskette into your diskette drive.
2. Open the explorer.
3. Copy the DscCalDI_140 folder on the floppy disk in the FD drive to a folder on the hard disk.

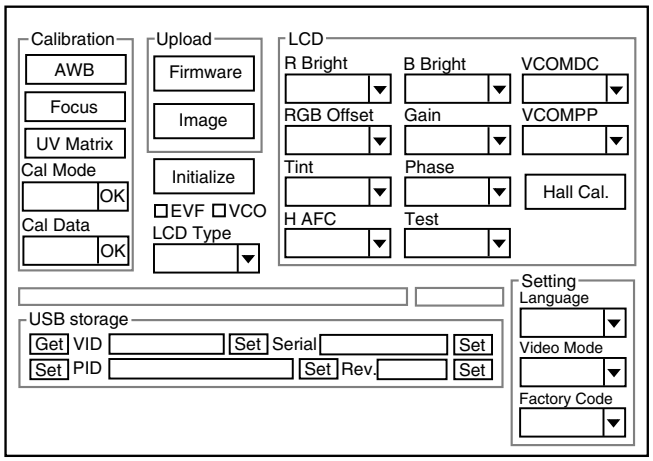
3. Installing USB driver

Install the USB driver with camera or connection kit for PC.

4. Pattern box (color viewer)

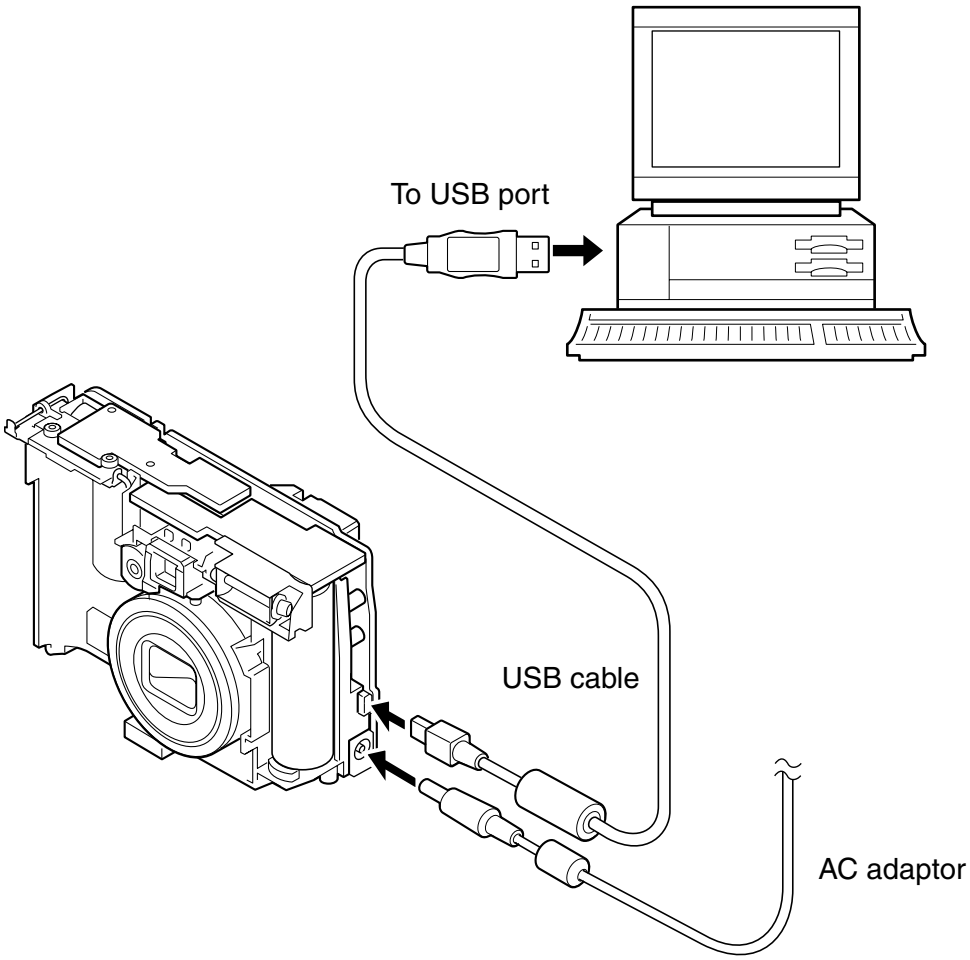
Turn on the switch and wait for 30 minutes for aging to take place before using Color Pure. It is used after adjusting the chroma meter (VJ8-0192) adjust color temperature to 3100 ± 20 K and luminosity to 900 ± 20 cd/m^2. Be careful of handling the lump and its circumference are high temperature during use and after power off for a while.

5. Computer screen during adjustment



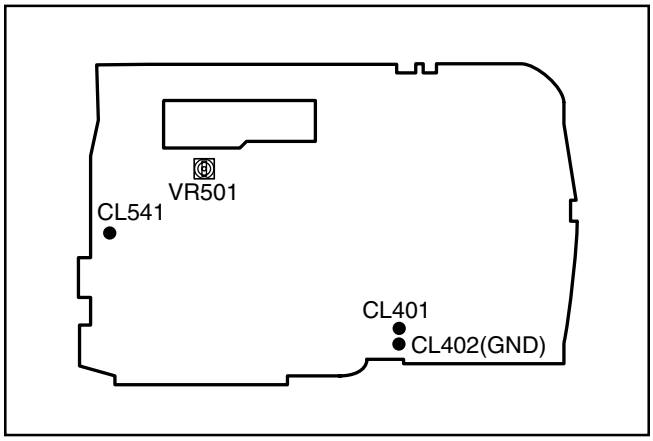
3-5. Connecting the camera to the computer

1. Line up the arrow on the cable connector with the notch on the camera's USB port. Insert the connector.
2. Locate a USB port on your computer.



3-6. Adjust Specifications

[CP1 board (Side B)]



Note:

1. Frequency adjustment is necessary to repair in the CP1 board and replace the parts.
2. Power voltage sets about +3.0 V.

Preparation:

1. Remove the cabinet back and holder monitor. You can see VR501 and CL541 in the CP1 board.
   Note: LCD flexible flat cable and backlight lead wire keep connecting. When assembling, holder monitor and metal part of LCD panel should not contact a substrate.
2. Insert the SD card.
3. Turn on the power switch, and set the camera mode.

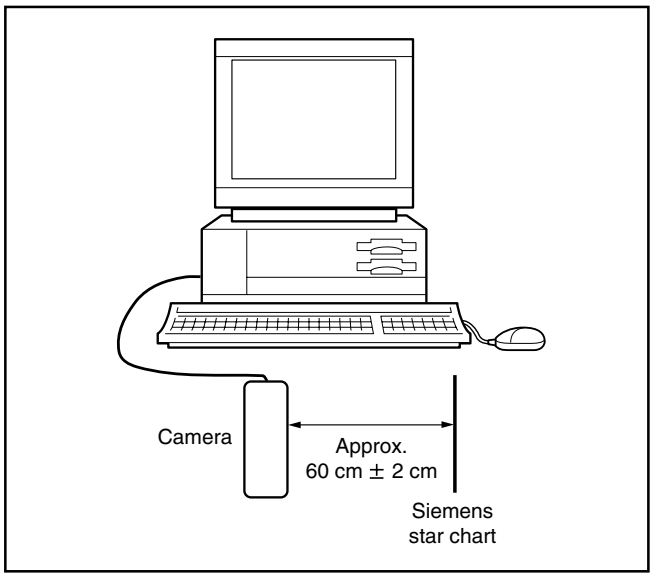
1. IC501 Oscillation Frequency Adjustment

Measuring Point	CL541
Measuring Equipment	Frequency counter
ADJ. Location	VR501
ADJ. Value	501.3 ± 1 kHz

Adjustment method:

1. Adjust with VR501 to 501.3 ± 1 kHz.

2. Lens Adjustment



Preparation:

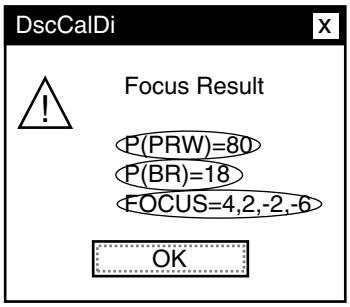
POWER switch: ON

Adjustment condition:

More than A3 size siemens star chart
Fluorescent light illumination with no flicker
Illumination above the subject should be 400 lux ± 10 %.

Adjustment method:

1. Set the siemens star chart 60 cm so that it becomes center of the screen.
2. Connect the camera and the computer with USB cable.
3. Set the main switch to PC.
4. Select “OK”, and press the SET button.
5. Double-click on the DscCalDi.exe.
6. Click the Focus, and click the Yes.
7. Lens adjustment value will appear on the screen.
8. Click the OK.



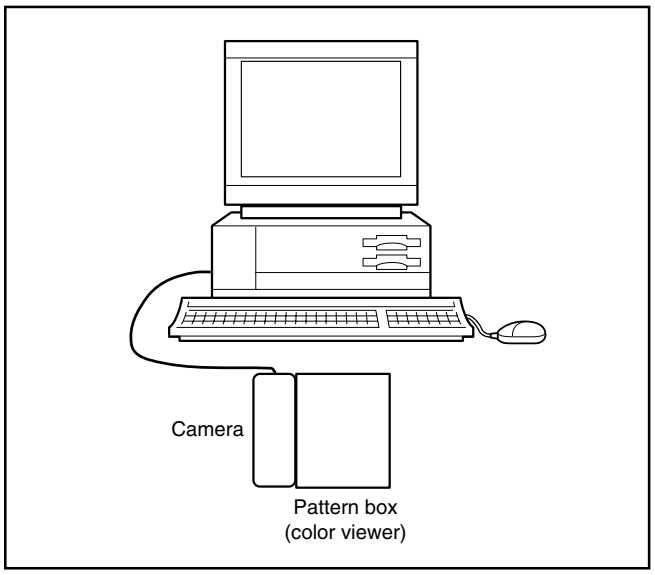
Adjustment value determination is effectuated using the "P(PRW)", “P(BR)” and "FOCUS" values.

If FOCUS=f1, f2, f3, f4 and the adjustment values fulfill the conditions below, they are determined as within specifications.

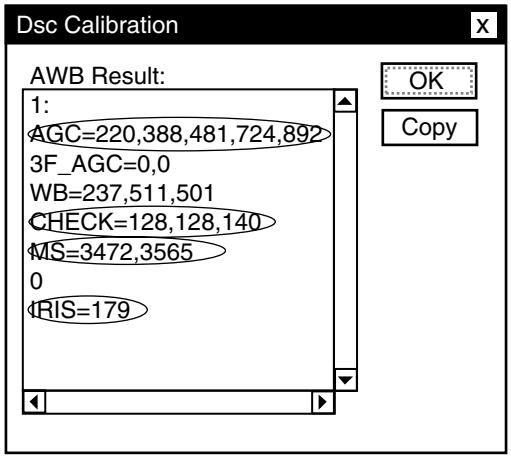
Adjustment value determination

67<=prw<=135
pbr<=40
-70<=f1<=68
-100<=f2<=100
-104<=f3<=136
-111<=f4<=183

3. AWB Adjustment



Preparation:
POWER switch: ON
Adjusting method:
1. When setting the camera in place, set it to an angle so that nothing appears in any part of the color viewer except the white section. (Do not enter any light.)
2. Double-click on the DscCalDi.exe.
3. Click the AWB, and click the Yes.
4. AWB adjustment value will appear on the screen.
5. Click the OK.



Adjustment value determination is effectuated using the "AGC", “CHECK" and "MS" values.
If AGC=a1, a2, a3, a4, a5, CHECK=wc0, wc1, wc2 and MS=MS1, MS2, the adjustment values fulfill the conditions below, they are determined as within specifications.

Adjustment value determination

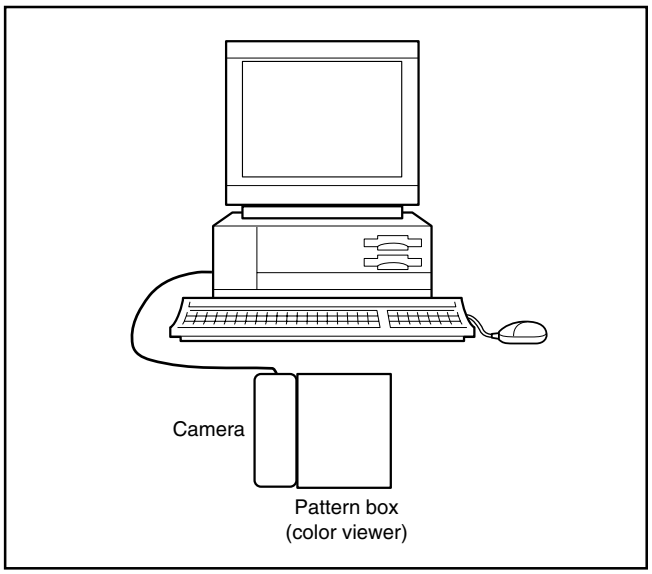
150<a1<350, 330<a2<540, 450<a3<680,
600<a4<850, 800<a5<1024
wc0=128 ± 2, wc1=128 ± 2, wc2=130 ± 40
2500<=MS1<=4500
2900<=MS2<=5200
150<IRIS<220

Adjustment values other than the above are irrelevant.

4. CCD White Point Defect Detect Adjustment

Preparation:
POWER switch: ON
Adjustment method:
1. Double-click on the DscCalDi.exe.
2. Select “CCD Defect” on the LCD “Test”, and click the “Yes”.
3. After the adjustment is completed, OK will display.
4. Click the OK.

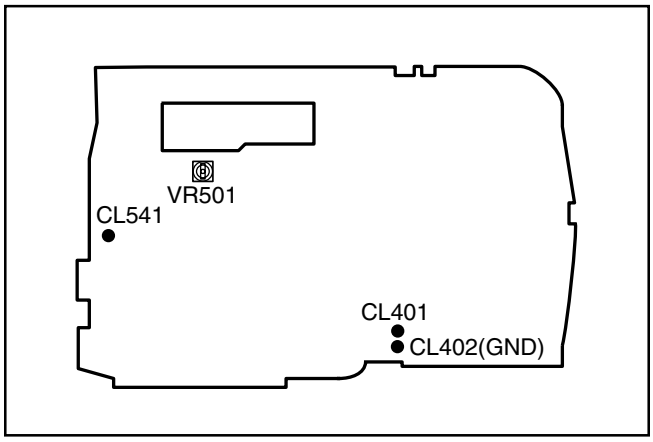
5. CCD Black Point And White Point Defect Detect Adjustment In Lighted



Preparation:
POWER switch: ON
Setting of pattern box:
Color temperature: 3100 ± 20 (K)
Luminance: 900 ± 20 (cd/m^2)
Adjusting method:
1. Set the camera 0 cm from the pattern box. (Do not enter any light.)
2. Double-click on the DscCalDi.exe.
3. Select “CCD Black” on the LCD “Test”, and click the “Yes”.
4. After the adjustment is completed, the number of defect will appear.

6. LCD Panel Adjustment

[CP1 board (Side B)]



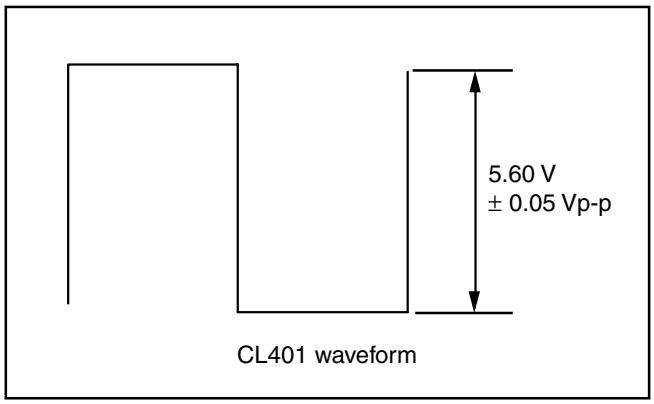
6-1. LCD VcomPP Adjustment

Preparation:

POWER switch: ON

Adjusting method:

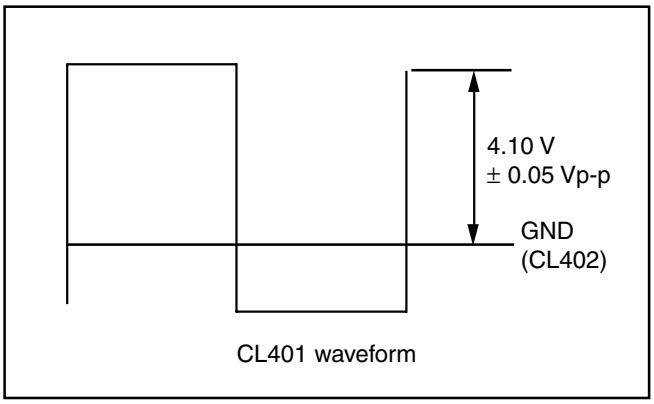
1. Double-click on the DscCalDi.exe.
2. Adjust LCD “VCOMPP” so that the amplitude of the CL401 waveform is 5.60 V ± 0.05 Vp-p.



6-2. LCD VcomDC Adjustment

Adjusting method:

1. Adjust LCD “VCOMDC” so that the amplitude of the CL401 waveform is 4.10 V ± 0.05 Vp-p.

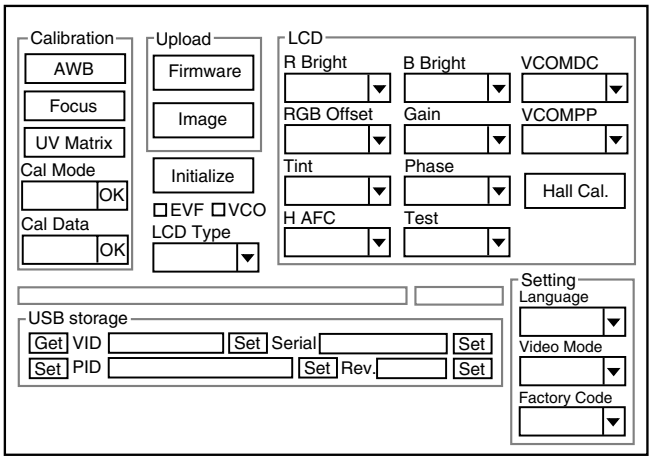


3-7. Factory Code Setting

1. Check the "Factory Code" display within the Setting group.
2. **For U.S.A., Canada and NTSC general area**
   If "FC_SANYO_U" does not appear, click on the " ▼ " mark located on the right of the "Factory Code" display BOX and select "FC_SANYO_U".
3. **For Europe and PAL general area**
   If "FC_SANYO_EX" does not appear, click on the " ▼ " mark located on the right of the "Factory Code" display BOX and select "FC_SANYO_EX".

3-8. Language Setting

1. Click on the " ▼ " mark located on the right of the "Language" display BOX.
2. Select language. (Default is English.)
3. End "DscCal" and remove the camera before turning the camera power OFF.



4. USB STORAGE INFORMATION REGISTRATION

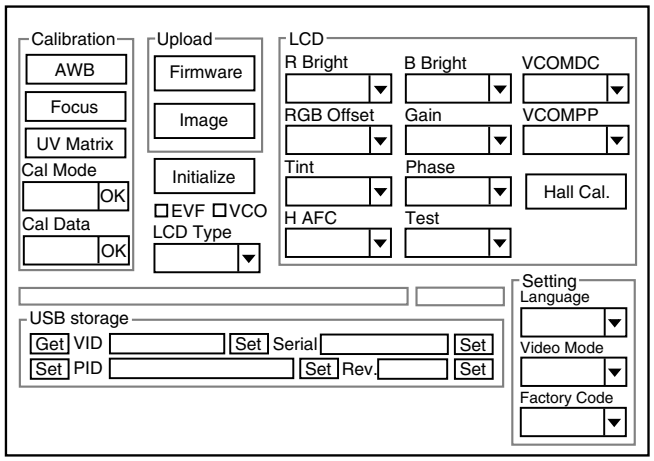
USB storage data is important for when the camera is connected to a computer via a USB connection.
If there are any errors in the USB storage data, or if it has not been saved, the USB specification conditions will not be satisfied, so always check and save the USB storage data.

Preparation:

POWER switch: ON

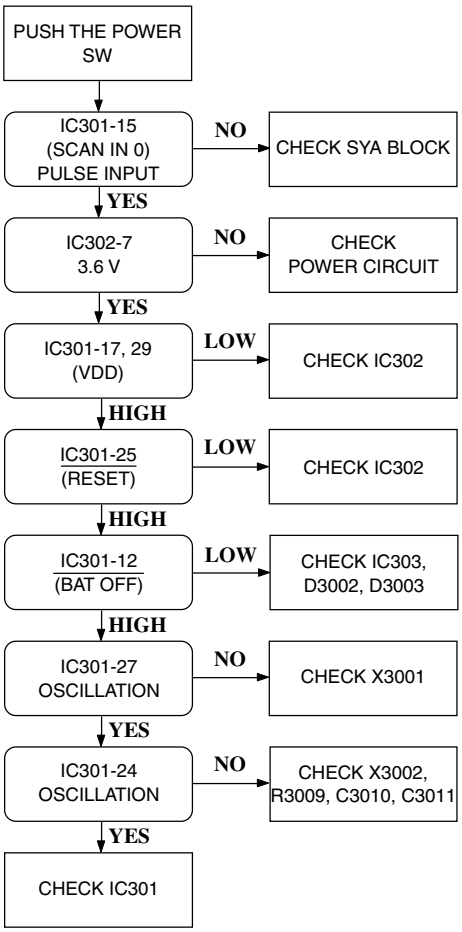
Adjustment method:

1. Connect the camera to a computer. (Refer to 3-5. Connecting the camera to the computer on the page 13.)
2. Double-click on the DscCalDi.exe.
3. Click on the Get button in the USB storage window and check the USB storage data.
   VID: SANYO
   PID: S4
   Serial:
   Rev. : 1.00
4. Check the “Serial” in the above USB storage data. If the displayed value is different from the serial number printed on the base of the camera, enter the number on the base of the camera. Then click the Set button.
5. Next, check VID, PID and Rev. entries in the USB storage data. If any of them are different from the values in 3. above, make the changes and then click the corresponding Set button.

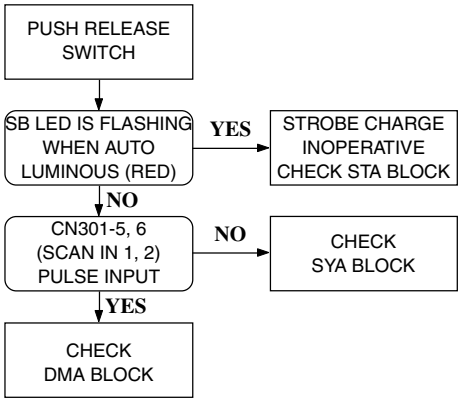


5. TROUBLESHOOTING GUIDE

POWER LOSS INOPERTIVE



TAKING INOPERATIVE

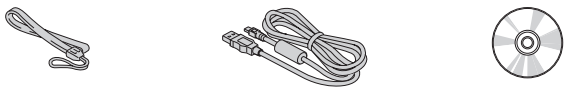


6. PARTS LIST

ACCESSORIES

LOCATION	PARTS NO.	DESCRIPTION
1	636 069 5337	STRAP HAND-SX711/J
2	645 059 6148	CABLE,DSC USB,SX781
3	645 068 2506	DISC,CD-ROM SSP 716 U (Sanyo software pack, Instruction manual PDF of Camera & Software: English, French, Spanish, German, Italian, Dutch, Chineese, Korean) (N.S.P.)
9052	636 077 9372	INSTRUCTION MANUAL, (Camera & Software: English)

1 2 3

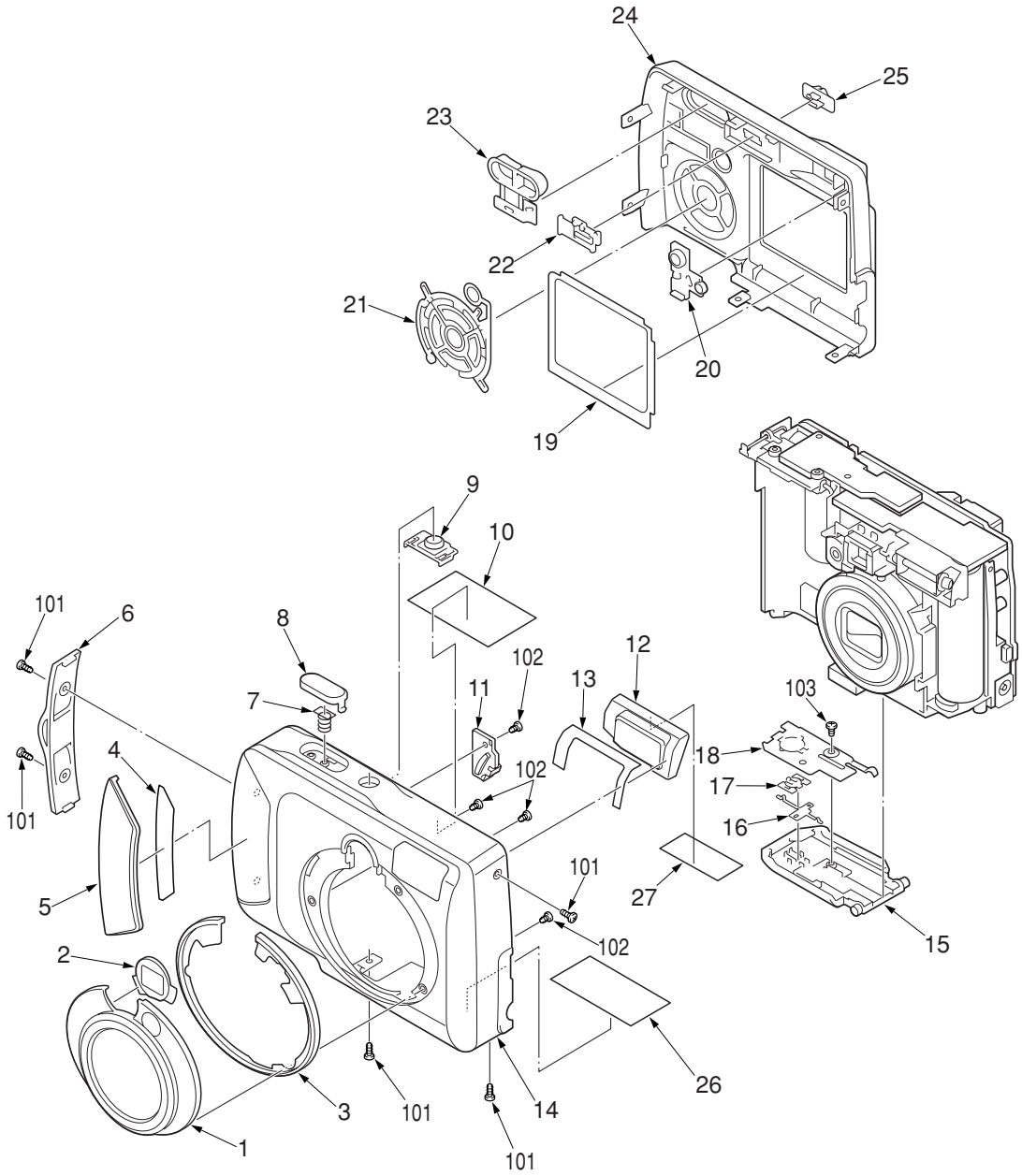


PACKING MATERIALS

LOCATION	PARTS NO.	DESCRIPTION
	636 080 0373	CARTON CASE INNER-716/EX
	636 078 4659	CUSHION SHEET-SX792/KRNK
	636 078 4185	REINFORCE PAD,A-SX715/EX

CABINET & CHASSIS PARTS 1

LOCATION	PARTS NO.	DESCRIPTION
1	636 078 2433	DEC LENS-SX715/EX
2	636 078 2426	DEC VF-SX715/EX
3	636 079 0049	DEC RING-SX716/EX
4	636 078 7988	ADHESIVE DEC GRIP-SX715
5	636 078 2440	DEC GRIP-SX715/EX
6	636 078 2372	CABINET LEFT-SX715/EX
7	636 064 4977	SPRING SHUTTER-SX541/JM
8	636 078 2334	BUTTON SHUTTER-SX715/EX
9	636 078 2341	BUTTON POWER-SX715/EX
10	636 078 8114	SPACER ST1-SX715/EX
11	636 078 2501	REFLECTOR LED-SX715/EX
12	636 078 2402	DEC FLASH-SX715/EX
13	636 078 7971	ADHESIVE DEC FLASH-SX715
14	636 079 7611	CABINET FRONT-SX716/EX
15	636 078 2396	COVER BATTERY-SX715/EX
16	636 078 2877	TERMINAL BATT D-SX715/EX
17	636 078 2785	CAP BATT TERMINAL-SX715EX
18	636 078 2860	TERMINAL BATT C-SX715/EX
19	636 078 2525	SPACER MONITOR-SX715/EX
20	636 078 2495	REFLECTOR VF-SX715/EX
21	636 078 2310	BUTTON SELECT-SX715/EX
22	636 078 2808	SLIDE FUNCTION-SX715/EX
23	636 078 2327	BUTTON ZOOM-SX715/EX
24	636 078 2358	CABINET BACK-SX715/EX
25	636 078 2488	KNOB FUNCTION-SX715/EX
26	636 081 9047	SPACER LCD WIRE-SX715/EX
27	636 081 6473	SPACER FLASH-SX715/EX
101	411 176 9405	SCR S-TPG PAN PCS 1.7X4.5
102	411 177 9503	SCR S-TPG PAN PCS 1.7X3
103	412 060 4506	SPECIAL SCREW-1.7X2.2



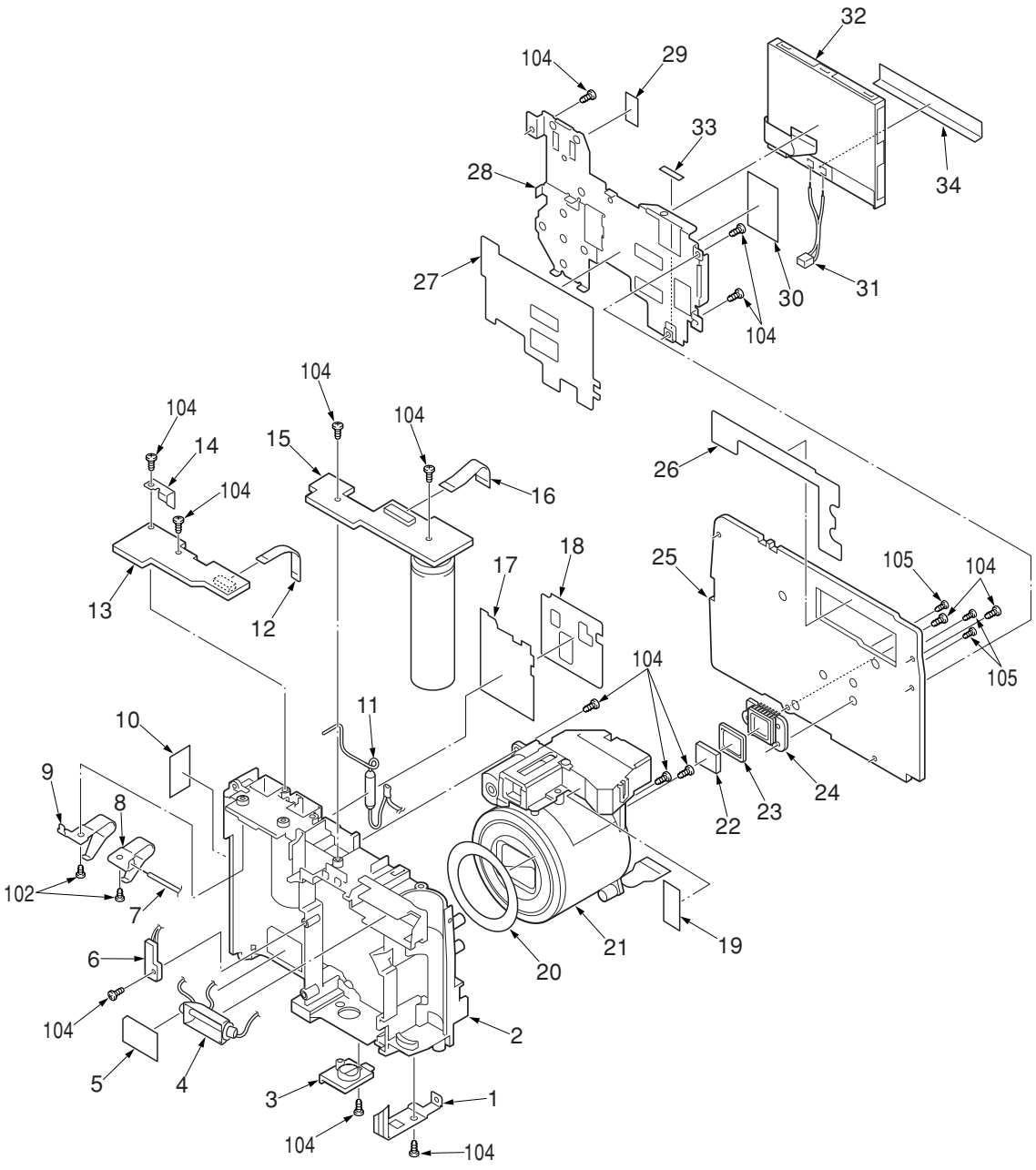
SX715/EX Parts List 1

N.S.P.: Not available as service parts.

CABINET & CHASSIS PARTS 2

LOCATION		PARTS NO.	DESCRIPTION
1		636 078 2815	SPRING EARTH-SX715/EX
2		636 078 2471	HOLDER CHASSIS-SX715/EX
3		636 078 2532	STAND-SX715/EX, STAND
4		645 068 7112	ASSY,LAMP-SX715
5		636 072 7328	LABEL CAUTION BATT-SX714
6		636 079 5501	COMPL PWB,TB-2
7		636 079 9875	ASSY,WIRE BAT - SX715
8		636 078 2846	TERMINAL BATT A-SX715/EX
9		636 078 2853	TERMINAL BATT B-SX715/EX
10		636 080 5378	SPACER TB2-SX715/EX
11	⚠	636 081 3779	ASSY,WIRE BAT + SX715
12		645 061 9779	FLEXIBLE FLAT CABLE
13		636 079 5495	COMPL PWB,TB-1
14		636 078 4567	EARTH PLATE-SX715/EX
15		636 079 5488	COMPL PWB,ST-1
16		645 067 7526	FLEXIBLE FLAT CABLE
17		636 078 8121	SPACER FUSE-SX715/EX
18		636 079 2692	SPACER FUSE UP-SX715/EX
19		636 081 2765	SPACER LENS-SX715/EX

LOCATION	PARTS NO.	DESCRIPTION
20	636 079 7635	DEC LENS FRONT-SX716/EX
21	645 066 6308	LENS(ASSY),VJ587900
22	645 066 4045	OPTICAL FILTER
23	636 080 0281	SPACER SX716
24	636 080 0199	ASSY,UNIT,CCD-SX716
25	636 079 5464	COMPL PWB,CP-1
26	636 078 8107	SPACER CP1-SX715/EX
27	636 078 8138	SPACER MONITOR A-SX715/EX
28	636 078 2464	HOLDER MONITOR-SX715/EX
29	636 079 7130	SPACER BUTTON ZOOM-715/EX
30	636 078 8145	SPACER MONITOR B-SX715/EX
31	636 080 5668	ASSY,WIRE LCD-BL-SX715
32	645 067 8820	LCD(TM018QV-A04-01)
33	636 081 5056	SPACER LCD-SX715/EX
34	636 081 7159	SPACER LCD LOW-SX715/EX
102	411 177 9503	SCR S-TPG PAN PCS 1.7X3
104	411 178 9403	SCR S-TPG PAN PCS 1.7X4.0
105	411 182 2605	SCR S-TPG PAN PCS 1.6X3.5



SX715/EX Parts List 2

N.S.P.: Not available as service parts.

ELECTRICAL PARTS

Note:

1. Materials of Capacitors and Resistors are abbreviated as follows ;

Resistors		Capacitors	
MT-FILM	Metallized Film Resistor	MT-POLYEST	Metallized Polyester Capacitor
MT-GLAZE	Metallized Glaze Resistor	MT-COMPO	Metallized Composite Capacitor
OXIDE-MT	Oxide Metallized Film Resistor	TA-SOLID	Tantalum Solid Capacitor
		AL-SOLID	Aluminum Solid Capacitor
		NP-ELECT	Non-Polarized Electrolytic Capacitor
		OS-SOLID	Aluminum Solid Capacitors with Organic Semiconductive Electrolytic Capacitor
		DL-ELECT	Double Layered Electrolytic Capacitor

2. Tolerance of Capacitor (10pF over) and Resistor are noted with follow symboles.

F .....1% G .....2% J .....5% K 10%
M .....20% N .....30% Z .....+80% ~ -20%

3. Capacitors

U : μF P : pF

4. Inductors

UH : μH MH : mH

5. N.S.P. : Not available as service parts.

COMPL PWB,CP-1

636 079 5464

LOCATION	PARTS NO.	DESCRIPTION
		(SEMICONDUCTORS)
Q1081	405 169 4508	TR DTC114EM
OR	405 172 4601	TR UNR32A1
Q1304	405 168 3700	TR DTC144EM
OR	405 172 4700	TR UNR32A3
Q1305	405 181 1509	TR NSBC114EPDXV6T5
OR	405 173 3900	TR PEMD3
OR	405 167 0304	TR EMD3
Q1306	405 181 1202	TR NSBC144EDXV6T5
OR	405 173 4006	TR PEMH2
OR	405 166 9506	TR EMH2
Q1401	405 167 0403	TR EMD12
Q3002	405 168 4004	TR DTA114EM
OR	405 172 4809	TR UNR31A1
Q3003	405 168 3809	TR DTA144EM
OR	405 172 4908	TR UNR31A3
Q3006	405 115 6709	TR DTC123EE
Q3007	405 169 4508	TR DTC114EM
OR	405 172 4601	TR UNR32A1
Q3009	405 167 0403	TR EMD12
Q3010	405 167 0403	TR EMD12
Q3011	405 167 0403	TR EMD12
Q5001	405 162 7605	TR CPH3414
Q5002	405 164 6408	TR MCH5803
Q5006	405 181 1400	TR NSBC124EPDXV6T5
OR	405 173 3801	TR PEMD2
OR	405 165 1204	TR EMD2
Q5008	405 115 5108	TR 2SA1774 R
Q5009	405 163 3606	TR CPH3409
Q5010	405 115 6402	TR DTA114YE
Q9001	405 153 6709	TR 2SC3931-D
Q9531	405 181 1509	TR NSBC114EPDXV6T5
OR	405 173 3900	TR PEMD3
OR	405 167 0304	TR EMD3
Q9532	405 186 9302	TR EMB19
Q9551	405 173 3702	TR FDC633N
		(INTEGRATED CIRCUITS)
IC101	410 491 0708	IC KS6M2U1780CBP (N.S.P.) BGA
IC103	409 571 6204	IC EDS1232AASE-75-E
OR	409 541 5107	IC K4S283233F-MN1L
IC106	409 479 6009	IC TC7MH273FK
IC111	409 527 9501	IC BU2385KN
IC121	409 606 7107	IC 67800716B (N.S.P.) BGA
IC141	409 524 0402	IC TC7MH245FK
IC172	409 446 9309	IC NJM2125F
IC301	410 527 9309	IC UPD789166GB-697-8ES-A
OR	410 523 1802	IC PD78F9177AGB-697-8ES-A
IC302	409 581 9608	IC S-8424BAAFT-G
OR	409 530 6900	IC S-8424BAAFT
IC303	409 581 9707	IC S-80815 CNNB-B8AT2G
OR	409 551 9706	IC S-80815CNNB-B8A
IC501	409 573 5809	IC BD9734KN
IC502	409 523 0502	IC TK11134CSCL
IC901	409 543 0001	IC AN20101A
IC904	409 505 9400	IC TK11130CS
IC906	409 594 7509	IC AD9948KCPZ
IC951	409 512 9806	IC LB8649FN
IC953	409 320 9203	IC TA75S01F
IC955	409 526 4002	IC XC9104D095M
		(DIODES)
D1001	407 210 1900	DIODE 1SS400
OR	407 226 4803	DIODE BAS516
D1701	407 221 4105	DIODE MA2SD19
D3001	407 227 3102	DIODE EMP11
OR	407 228 0506	DIODE HN1D01FE
OR	407 232 7706	DIODE NSDEMP11XV6T5
D3002	407 227 3102	DIODE EMP11
OR	407 228 0506	DIODE HN1D01FE
OR	407 232 7706	DIODE NSDEMP11XV6T5
D3003	407 227 3102	DIODE EMP11
OR	407 228 0506	DIODE HN1D01FE
OR	407 232 7706	DIODE NSDEMP11XV6T5
D3004	407 210 1900	DIODE 1SS400
OR	407 226 4803	DIODE BAS516
D3005	407 205 2707	LED SML-310LT,
D3006	407 221 0107	DIODE MA2SD24
D3007	407 210 1900	DIODE 1SS400
OR	407 226 4803	DIODE BAS516
D3009	407 210 1900	DIODE 1SS400
OR	407 226 4803	DIODE BAS516
D3010	407 210 1900	DIODE 1SS400
OR	407 226 4803	DIODE BAS516
D3011	407 210 1900	DIODE 1SS400
OR	407 226 4803	DIODE BAS516
D5001	407 225 3609	DIODE HN2D01JE
D5002	407 205 5203	DIODE RB521S-30
D5003	407 232 3609	DIODE SD833-04SC
D5004	407 221 7403	DIODE DAN217U
D5005	407 217 4904	DIODE EP10QY03
D5006	407 217 4904	DIODE EP10QY03
D5011	407 232 3609	DIODE SD833-04SC
D5012	407 232 3609	DIODE SD833-04SC
D9001	407 198 9905	DIODE MA727
D9002	407 210 1900	DIODE 1SS400
OR	407 226 4803	DIODE BAS516
D9003	407 210 1900	DIODE 1SS400
OR	407 226 4803	DIODE BAS516
D9551	407 232 3609	DIODE SD833-04SC
		(OSCILLATORS)
X1101	645 053 8780	OSC,CRYSTAL 28.63636MHZ
X3001	645 046 1415	OSC,CERAMIC 4.00MHZ
X3002	645 054 3791	OSC,CRYSTAL 32.768KHZ
		(VARISTOR)
VA131	408 050 0504	VARISTOR AVR-M1005C080MT

LOCATION	PARTS NO.	DESCRIPTION
		(FILTERS)
XF107	645 061 7553	FILTER,EMI 2200000PF
XF111	645 061 7553	FILTER,EMI 2200000PF
XF901	645 061 7553	FILTER,EMI 2200000PF
XF902	645 061 7553	FILTER,EMI 2200000PF
		(SWITCHES)
S3001	645 068 9505	SWITCH,SLIDE 1P-3T,
S3002	645 045 2857	SWITCH,PUSH,
S3003	645 045 2857	SWITCH,PUSH,
S3004	645 045 2857	SWITCH,PUSH,
S3005	645 045 2857	SWITCH,PUSH,
S3006	645 045 2857	SWITCH,PUSH,
S3007	645 045 2857	SWITCH,PUSH,
S3008	645 045 2857	SWITCH,PUSH,
S3009	645 045 2857	SWITCH,PUSH,
		(FUSES)
F5001	⚠ 423 031 1707	FUSE 32V 2A
F5002	⚠ 423 031 1707	FUSE 32V 2A
F5003	⚠ 423 031 1707	FUSE 32V 2A
F5004	⚠ 423 031 1707	FUSE 32V 2A
F5005	⚠ 423 031 1509	FUSE 32V 1A
		(JACK)
JK501	645 027 7030	SOCKET,DC
		(VARIABLE RESISTOR)
VR501	645 048 4759	VR,SEMI,3.3K S
		(INDUCTORS)
L1040	645 061 7393	INDUCTOR,10U M
L1051	645 061 7416	INDUCTOR,47U M
L1071	645 066 4724	IMPEDANCE,600 OHM P
L1072	645 066 4724	IMPEDANCE,600 OHM P
L1101	645 066 4724	IMPEDANCE,600 OHM P
L1102	645 020 1899	INDUCTOR,68 OHM
L1103	645 020 1899	INDUCTOR,68 OHM
L1104	645 066 4724	IMPEDANCE,600 OHM P
L1701	645 061 7393	INDUCTOR,10U M
L1702	645 061 7393	INDUCTOR,10U M
L1705	645 061 7416	INDUCTOR,47U M
L5001	645 063 7131	INDUCTOR,10U N
L5002	645 064 6386	INDUCTOR,3.3U N
L5003	645 059 1068	INDUCTOR,4.7U M
L5004	645 063 7131	INDUCTOR,10U N
L5005	645 063 7131	INDUCTOR,10U N
L5011	645 041 1977	INDUCTOR,330 OHM
L5012	645 041 1953	INDUCTOR,100 OHM
L5013	645 041 1953	INDUCTOR,100 OHM
L9001	645 059 8111	IMPEDANCE,1000 OHM P
L9002	645 066 4724	IMPEDANCE,600 OHM P
L9003	645 053 8872	INDUCTOR,100U K
L9551	645 058 0918	INDUCTOR,10U M
		(TRANSFORMER)
T5001	645 068 3572	TRANS,POWER,PULSE
		(RECHAEGEABLE BATTERY)
Z3001	⚠ 645 051 6009	BATTERY,RECHARGE
		(CAPACITORS)
C1001	403 311 4505	CERAMIC 1000P K 50V
C1002	403 311 4505	CERAMIC 1000P K 50V
C1011	403 346 2309	CERAMIC 0.1U K 10V
C1012	403 346 2309	CERAMIC 0.1U K 10V
C1013	403 346 2309	CERAMIC 0.1U K 10V
C1014	403 346 2309	CERAMIC 0.1U K 10V
C1015	403 346 2309	CERAMIC 0.1U K 10V
C1016	403 346 2309	CERAMIC 0.1U K 10V
C1019	403 358 3202	CERAMIC 10U K 6.3V
C1041	403 346 2309	CERAMIC 0.1U K 10V
C1042	403 346 2309	CERAMIC 0.1U K 10V
C1051	403 346 2309	CERAMIC 0.1U K 10V
C1052	403 380 6608	CERAMIC 0.22U K 6.3V
C1053	403 332 9503	CERAMIC 1U M 6.3V
C1054	403 346 2309	CERAMIC 0.1U K 10V
C1055	403 346 2309	CERAMIC 0.1U K 10V
C1056	403 346 2309	CERAMIC 0.1U K 10V
C1061	403 332 9503	CERAMIC 1U M 6.3V
C1071	403 383 5202	CERAMIC 4.7U K 6.3V
C1074	403 346 2309	CERAMIC 0.1U K 10V
C1075	403 346 2309	CERAMIC 0.1U K 10V
C1076	403 346 2309	CERAMIC 0.1U K 10V
C1077	403 346 2309	CERAMIC 0.1U K 10V
C1101	403 346 2309	CERAMIC 0.1U K 10V
C1102	403 309 8102	CERAMIC 5P C 50V
C1104	403 346 2309	CERAMIC 0.1U K 10V
C1105	403 309 8102	CERAMIC 5P C 50V
C1114	403 309 8102	CERAMIC 5P C 50V
C1201	403 332 9503	CERAMIC 1U M 6.3V
C1204	403 332 9503	CERAMIC 1U M 6.3V
C1306	403 332 9503	CERAMIC 1U M 6.3V
C1405	403 346 2309	CERAMIC 0.1U K 10V
C1701	403 332 9503	CERAMIC 1U M 6.3V
C1702	403 384 9209	CERAMIC 1U M 4V
C1704	403 332 9503	CERAMIC 1U M 6.3V
C1705	403 332 9503	CERAMIC 1U M 6.3V
C1706	403 379 6701	CERAMIC 10U K 16V
C1707	403 384 9209	CERAMIC 1U M 4V
C1712	403 379 6701	CERAMIC 10U K 16V
C1713	403 358 3202	CERAMIC 10U K 6.3V
C1716	403 332 9503	CERAMIC 1U M 6.3V
C3002	403 332 9503	CERAMIC 1U M 6.3V
C3003	403 346 2309	CERAMIC 0.1U K 10V
C3005	403 346 2309	CERAMIC 0.1U K 10V
C3006	403 384 4303	TA-SOLID 15U M 10V
C3009	403 346 2309	CERAMIC 0.1U K 10V
C3010	403 309 8607	CERAMIC 18P J 50V
C3011	403 311 7506	CERAMIC 22P J 50V
C3012	403 311 3409	CERAMIC 0.01U K 16V
C3013	403 311 4505	CERAMIC 1000P K 50V
C3014	403 346 2309	CERAMIC 0.1U K 10V
C3017	403 346 2309	CERAMIC 0.1U K 10V
C3018	403 346 2309	CERAMIC 0.1U K 10V
C5001	403 371 9007	CERAMIC 10U M 6.3V
C5002	403 340 6907	CERAMIC 1U K 16V
C5003	403 311 4505	CERAMIC 1000P K 50V
C5004	403 340 6907	CERAMIC 1U K 16V
C5005	403 378 3602	POS-SOLID 33U M 10V
C5006	403 340 6907	CERAMIC 1U K 16V
C5007	403 340 6907	CERAMIC 1U K 16V
C5008	403 392 5002	CERAMIC 22U M 6.3V
C5010	403 392 5002	CERAMIC 22U M 6.3V
C5011	403 346 9803	CERAMIC 0.047U K 10V
C5012	403 346 2309	CERAMIC 0.1U K 10V
C5013	403 346 2309	CERAMIC 0.1U K 10V
C5014	403 340 8901	CERAMIC 0.082U K 10V
C5015	403 343 3101	CERAMIC 1U K 6.3V
C5016	403 343 3101	CERAMIC 1U K 6.3V
C5017	403 346 2309	CERAMIC 0.1U K 10V
C5019	403 315 6406	CERAMIC 180P J 25V
C5020	403 346 2309	CERAMIC 0.1U K 10V
C5021	403 311 3409	CERAMIC 0.01U K 16V
C5022	403 346 2309	CERAMIC 0.1U K 10V
C5023	403 346 2309	CERAMIC 0.1U K 10V
C5024	403 344 0505	CERAMIC 0.033U K 10V
C5025	403 311 3409	CERAMIC 0.01U K 16V
C5027	403 311 3409	CERAMIC 0.01U K 16V
C5028	403 371 9007	CERAMIC 10U M 6.3V
C5030	403 378 6009	CERAMIC 4.7U K 16V
C5031	403 379 6701	CERAMIC 10U K 16V
C5032	403 343 3101	CERAMIC 1U K 6.3V
C5034	403 340 6907	CERAMIC 1U K 16V
C5035	403 387 8704	CERAMIC 10U K 10V
C5036	403 346 2309	CERAMIC 0.1U K 10V
C5037	403 311 3409	CERAMIC 0.01U K 16V
C9001	403 320 5500	CERAMIC 1U Z 25V
C9003	403 379 0808	CERAMIC 1U M 16V
C9004	403 320 5500	CERAMIC 1U Z 25V
C9006	403 384 9209	CERAMIC 1U M 4V
C9009	403 379 0808	CERAMIC 1U M 16V
C9011	403 379 6701	CERAMIC 10U K 16V
C9031	403 320 5500	CERAMIC 1U Z 25V
C9033	403 320 5500	CERAMIC 1U Z 25V
C9034	403 192 5905	CERAMIC 0.1U K 25V
C9035	403 346 2309	CERAMIC 0.1U K 10V
C9036	403 341 4803	CERAMIC 10U K 10V
C9037	403 155 1807	CERAMIC 0.01U K 25V
C9038	403 384 9209	CERAMIC 1U M 4V
C9044	403 311 3409	CERAMIC 0.01U K 16V
C9045	403 384 9209	CERAMIC 1U M 4V
C9050	403 320 5500	CERAMIC 1U Z 25V
C9052	403 338 4403	CERAMIC 0.1U K 16V

LOCATION	PARTS NO.	DESCRIPTION
C9053	403 320 5500	CERAMIC 1U Z 25V
C9061	403 269 2806	CERAMIC 0.15U K 25V
C9062	403 346 2309	CERAMIC 0.1U K 10V
C9063	403 346 2309	CERAMIC 0.1U K 10V
C9064	403 346 2309	CERAMIC 0.1U K 10V
C9066	403 346 2309	CERAMIC 0.1U K 10V
C9068	403 358 3202	CERAMIC 10U K 6.3V
C9069	403 358 3202	CERAMIC 10U K 6.3V
C9070	403 384 9209	CERAMIC 1U M 4V
C9071	403 384 9209	CERAMIC 1U M 4V
C9072	403 311 4505	CERAMIC 1000P K 50V
C9073	403 311 4505	CERAMIC 1000P K 50V
C9502	403 344 0505	CERAMIC 0.033U K 10V
C9504	403 346 2309	CERAMIC 0.1U K 10V
C9506	403 346 2309	CERAMIC 0.1U K 10V
C9507	403 346 2309	CERAMIC 0.1U K 10V
C9509	403 383 5202	CERAMIC 4.7U K 6.3V
C9510	403 344 0505	CERAMIC 0.033U K 10V
C9513	403 344 0505	CERAMIC 0.033U K 10V
C9514	403 344 0505	CERAMIC 0.033U K 10V
C9531	403 346 2309	CERAMIC 0.1U K 10V
C9551	403 371 9007	CERAMIC 10U M 6.3V
C9552	403 371 9007	CERAMIC 10U M 6.3V
C9553	403 311 7506	CERAMIC 22P J 50V
C9554	403 378 3602	POS-SOLID 33U M 10V
		(RESISTOR PACKS)
RB101	645 037 4371	R-NETWORK 220X4 1/32W
RB102	645 037 4371	R-NETWORK 220X4 1/32W
RB103	645 037 4371	R-NETWORK 220X4 1/32W
RB104	645 037 4371	R-NETWORK 220X4 1/32W
RB105	645 061 3685	R-NETWORK 220X2 1/16W
RB106	645 061 3661	R-NETWORK 10KX2 1/16W
RB107	645 061 3661	R-NETWORK 10KX2 1/16W
RB108	645 061 3722	R-NETWORK 47KX2 1/16W
RB131	645 061 3661	R-NETWORK 10KX2 1/16W
RB141	645 028 0719	R-NETWORK 10KX4 1/32W
RB142	645 028 0719	R-NETWORK 10KX4 1/32W
RB143	645 028 0696	R-NETWORK 100X4 1/32W
RB144	645 061 3647	R-NETWORK 100X2 1/16W
RB301	645 032 8886	R-NETWORK 47KX4 1/32W
RB305	645 061 3661	R-NETWORK 10KX2 1/16W
RB306	645 061 3722	R-NETWORK 47KX2 1/16W
RB307	645 061 3678	R-NETWORK 100KX2 1/16W
RB501	645 061 3654	R-NETWORK 1KX2 1/16W
RB502	645 028 0702	R-NETWORK 1KX4 1/32W
RB901	645 028 0696	R-NETWORK 100X4 1/32W
RB902	645 028 0696	R-NETWORK 100X4 1/32W
RB903	645 061 3647	R-NETWORK 100X2 1/16W
RB905	645 061 3647	R-NETWORK 100X2 1/16W
RB951	645 061 3722	R-NETWORK 47KX2 1/16W
		(RESISTORS)
R1001	401 224 9006	MT-GLAZE 10K JA 1/16W
R1004	401 224 9006	MT-GLAZE 10K JA 1/16W
R1012	401 224 8801	MT-GLAZE 100 JA 1/16W
R1013	401 261 9601	MT-FILM 68 DD 1/16W
R1052	401 261 3401	MT-FILM 3.6K DU 1/16W
R1053	401 261 5108	MT-FILM 1.0K DU 1/16W
R1054	401 261 3708	MT-FILM 1.8K DU 1/16W
R1057	401 226 1503	MT-GLAZE 0.000 ZA 1/16W
R1058	401 261 5108	MT-FILM 1.0K DU 1/16W
R1065	401 224 9006	MT-GLAZE 10K JA 1/16W
R1066	401 261 5108	MT-FILM 1.0K DU 1/16W
R1071	401 261 5108	MT-FILM 1.0K DU 1/16W
R1081	401 261 6501	MT-FILM 220 DU 1/16W
R1102	401 224 8801	MT-GLAZE 100 JA 1/16W
R1103	401 225 1801	MT-GLAZE 47 JA 1/16W
R1104	401 225 1801	MT-GLAZE 47 JA 1/16W
R1106	401 226 1503	MT-GLAZE 0.000 ZA 1/16W
R1111	401 261 5306	MT-FILM 470 DU 1/16W
R1201	401 225 8107	MT-GLAZE 10 JA 1/16W
R1311	401 225 3805	MT-GLAZE 1.5K JA 1/16W
R1350	401 225 1108	MT-GLAZE 27 JA 1/16W
R1359	401 225 1108	MT-GLAZE 27 JA 1/16W
R1401	401 224 8801	MT-GLAZE 100 JA 1/16W
R1404	401 224 9600	MT-GLAZE 2.7K JA 1/16W
R1410	401 224 9006	MT-GLAZE 10K JA 1/16W
R1701	401 224 9006	MT-GLAZE 10K JA 1/16W
R1702	401 261 2602	MT-FILM 10K DU 1/16W
R1703	401 261 8703	MT-FILM 22K DD 1/16W
R1704	401 261 2602	MT-FILM 10K DU 1/16W
R1705	401 224 9808	MT-GLAZE 220K JA 1/16W
R1706	401 261 9106	MT-FILM 12K DD 1/16W
R1707	401 261 8505	MT-FILM 47K DD 1/16W
R1708	401 261 9106	MT-FILM 12K DD 1/16W
R1709	401 261 3203	MT-FILM 3K DU 1/16W
R1711	401 225 1405	MT-GLAZE 47K JA 1/16W
R1712	401 226 1503	MT-GLAZE 0.000 ZA 1/16W
R1713	401 261 2602	MT-FILM 10K DU 1/16W
R1716	401 226 1503	MT-GLAZE 0.000 ZA 1/16W
R1904	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R3001	401 225 8503	MT-GLAZE 1.8K JA 1/16W
R3002	401 224 9303	MT-GLAZE 1K JA 1/16W
R3006	401 258 7009	MT-GLAZE 150K DC 1/16W
R3007	401 258 7009	MT-GLAZE 150K DC 1/16W
R3009	401 225 0408	MT-GLAZE 330K JA 1/16W
R3012	401 224 9006	MT-GLAZE 10K JA 1/16W
R3015	401 225 1405	MT-GLAZE 47K JA 1/16W
R3020	401 225 1603	MT-GLAZE 390 JA 1/16W
R3021	401 226 1503	MT-GLAZE 0.000 ZA 1/16W
R3022	401 226 1503	MT-GLAZE 0.000 ZA 1/16W
R3023	401 226 1503	MT-GLAZE 0.000 ZA 1/16W
R3025	401 225 1207	MT-GLAZE 4.7K JA 1/16W
R5001	401 258 7009	MT-GLAZE 150K DC 1/16W
R5002	401 262 0003	MT-FILM 11K DD 1/16W
R5003	401 261 4507	MT-FILM 1.5K DU 1/16W
R5004	401 226 1503	MT-GLAZE 0.000 ZA 1/16W
R5005	401 261 9106	MT-FILM 12K DD 1/16W
R5006	401 261 2701	MT-FILM 4.7K DU 1/16W
R5007	401 261 5603	MT-FILM 620 DU 1/16W
R5009	401 261 9106	MT-FILM 12K DD 1/16W
R5010	401 261 9106	MT-FILM 12K DD 1/16W
R5011	401 261 2800	MT-FILM 5.1K DU 1/16W
R5015	401 226 1503	MT-GLAZE 0.000 ZA 1/16W
R5017	401 261 2602	MT-FILM 10K DU 1/16W
R5024	401 258 7009	MT-GLAZE 150K DC 1/16W
R5025	401 261 2602	MT-FILM 10K DU 1/16W
R5026	401 261 3401	MT-FILM 3.6K DU 1/16W
R5027	401 258 7009	MT-GLAZE 150K DC 1/16W
R5028	401 261 7508	MT-FILM 100K DD 1/16W
R5029	401 226 1503	MT-GLAZE 0.000 ZA 1/16W
R5030	401 258 7009	MT-GLAZE 150K DC 1/16W
R5031	401 261 2503	MT-FILME 9.1K DU 1/16W
R5036	401 258 7009	MT-GLAZE 150K DC 1/16W
R5037	401 261 2602	MT-FILM 10K DU 1/16W
R5038	401 261 4705	MT-FILM 680 DU 1/16W
R5039	401 224 9303	MT-GLAZE 1K JA 1/16W
R5040	401 224 9006	MT-GLAZE 10K JA 1/16W
R5043	401 224 9006	MT-GLAZE 10K JA 1/16W
R5045	401 224 9006	MT-GLAZE 10K JA 1/16W
R5046	401 262 3905	MT-FILM 24 DD 1/16W
R5047	401 262 0201	MT-FILM 47 DD 1/16W
R5049	401 261 9106	MT-FILM 12K DD 1/16W
R5050	401 261 3203	MT-FILM 3K DU 1/16W
R5051	401 226 1503	MT-GLAZE 0.000 ZA 1/16W
R5053	401 234 9904	MT-GLAZE 6.8K JA 1/16W
R5054	401 225 1405	MT-GLAZE 47K JA 1/16W
R5060	401 227 5609	MT-GLAZE 8.2K JA 1/16W
R5066	401 226 1503	MT-GLAZE 0.000 ZA 1/16W
R9001	401 302 2707	MT-GLAZE 47 DD 1/16W
R9005	401 226 1503	MT-GLAZE 0.000 ZA 1/16W
R9007	401 224 9303	MT-GLAZE 1K JA 1/16W
R9009	401 262 1604	MT-GLAZE 2.2K DC 1/16W
R9013	401 224 8900	MT-GLAZE 100K JA 1/16W
R9015	401 225 0903	MT-GLAZE 82K JA 1/16W
R9018	401 224 9402	MT-GLAZE 1.0M JA 1/16W
R9019	401 224 8801	MT-GLAZE 100 JA 1/16W
R9020	401 234 4800	MT-GLAZE 3.3 JA 1/16W
R9023	401 302 2707	MT-GLAZE 47 DD 1/16W
R9030	401 234 4800	MT-GLAZE 3.3 JA 1/16W
R9031	401 234 4800	MT-GLAZE 3.3 JA 1/16W
R9034	401 226 1503	MT-GLAZE 0.000 ZA 1/16W
R9035	401 226 1503	MT-GLAZE 0.000 ZA 1/16W
R9501	401 291 6908	MT-FILM 0.47 FA 1/4W
R9502	401 261 8406	MT-FILM 43K DD 1/16W

LOCATION	PARTS NO.	DESCRIPTION
R9503	401 261 3104	MT-FILM 6.8K DU 1/16W
R9504	401 261 9304	MT-FILM 15K DD 1/16W
R9505	401 261 8802	MT-FILM 24K DD 1/16W
R9507	401 261 8802	MT-FILM 24K DD 1/16W
R9510	401 261 9304	MT-FILM 15K DD 1/16W
R9531	401 225 1603	MT-GLAZE 390 JA 1/16W
R9532	401 225 1603	MT-GLAZE 390 JA 1/16W
R9533	401 225 1603	MT-GLAZE 390 JA 1/16W
R9534	401 261 8109	MT-FILM 33K DD 1/16W
R9536	401 225 0507	MT-GLAZE 33K JA 1/16W
R9538	401 225 0507	MT-GLAZE 33K JA 1/16W
R9551	401 291 6809	MT-GLAZE 390K DC 1/16W
R9552	401 261 9304	MT-FILM 15K DD 1/16W
R9553	401 257 4207	MT-GLAZE 130K DC 1/16W
		(CONNECTORS)
CN101	645 051 6238	SOCKET,FPC 14P (N.S.P)
CN105	645 054 4163	SOCKET,8P (N.S.P)
CN141	645 064 7970	SOCKET,CARD(SD) 1(N.S.P)
CN171	645 066 9613	SOCKET,FPC 33P (N.S.P)
CN301	645 057 2845	SOCKET,FPC 6P (N.S.P)
CN501	645 059 0122	PLUG,PWB-WIRE 2P (N.S.P)
CN502	645 043 0336	TERMINAL,EARTH (N.S.P)
CN503	645 062 5671	TERMINAL,EARTH (N.S.P)
CN951	645 066 3673	SOCKET,FPC 21P (N.S.P)

COMPL PWB,TB-1

636 079 5495

		(SWITCHES)
S6501	645 054 8857	SWITCH,PUSH 1P-2TX1
S6502	645 045 2857	SWITCH,PUSH
		(CONNECTOR)
CN651	645 059 0214	SOCKET,FPC 6P (N.S.P)

COMPL PWB,TB-2

636 079 5501

		(DIODE)
D6601	407 232 2503	LED SML-512UW-T86
		(MISCELLANEOUS)
	636 079 2074	ASSY,WIRE CP1&TB2-SX715 (N.S.P.)
	636 080 5675	ASSY,WIRE CP1&TB2-SX715 (N.S.P.)

COMPL PWB,ST-1

636 079 5488

		(SEMICONDUCTORS)
Q5401	405 115 7508	TR DTC123JE
Q5402	405 169 4508	TR DTC114EM
OR	405 172 4601	TR UNR32A1
Q5405	405 170 0308	TR CPH5504-E
Q5407	405 152 5406	TR 3LN01S-TL
Q5409	405 171 4800	TR CY25BAJ-8F
Q5410	405 102 6705	TR 2SA1745-7
OR	405 102 8303	TR 2SA1745-6
Q5411	405 115 7201	TR DTC144EE
		(DIODES)
D5402	407 229 9508	DIODE F1P8
D5403	407 228 5402	DIODE CRG02
D5404	407 229 8709	DIODE CMC01
D5405	407 231 1507	THYRISTOR CR05BS-8
D5407	407 162 8507	DIODE DAN222
D5408	407 205 5203	DIODE RB521S-30
		(TRANSFORMERS)
T5401	645 057 5976	TRANS,STEP UP
T5402	645 056 0378	TRANS,STEP UP
		(CAPACITORS)
C5401	403 381 1206	POS-SOLID 33U M 6.3V
C5403	403 375 0901	CERAMIC 0.047U K 16V
C5404	403 311 4505	CERAMIC 1000P K 50V
C5406	403 311 3409	CERAMIC 0.01U K 16V
C5407	403 317 1904	CERAMIC 6800P K 25V
C5409	403 347 9109	CERAMIC 0.033U Z 16V
C5410	403 341 4407	CERAMIC 0.047U K 350V
C5411	403 357 3302	CERAMIC 0.01U K 630V
C5412	404 097 7506	ELECT 120U A 300V
C5413	403 317 1904	CERAMIC 6800P K 25V
C5420	403 311 7704	CERAMIC 4700P K 25V
		(RESISTORS)
R5401	401 224 9303	MT-GLAZE 1K JA 1/16W
R5406	401 224 9105	MT-GLAZE 150 JA 1/16W
R5408	401 229 3900	MT-GLAZE 180 JA 1/16W
R5409	401 224 9501	MT-GLAZE 2.2K JA 1/16W
R5413	401 224 9006	MT-GLAZE 10K JA 1/16W
R5414	401 224 9303	MT-GLAZE 1K JA 1/16W
R5417	402 078 4407	MT-GLAZE 10M FKG 1/8W
R5418	401 226 5402	MT-GLAZE 56 JA 1/16W
R5419	401 261 7300	MT-FILME 82K DD 1/16W
R5420	401 261 2602	MT-FILM 10K DU 1/16W
R5422	402 079 0200	MT-GLAZE 220K JKG 1/8W
R5423	401 262 3202	MT-FILM 33 DD 1/16W
R5424	401 225 7902	MT-GLAZE 220 JA 1/16W
R5425	402 077 7409	MT-GLAZE 100K JKG 1/8W
R5426	401 225 9005	MT-GLAZE 470K JA 1/16W
R5429	401 261 3005	MT-FILM 6.2K DU 1/16W
R5430	401 225 1207	MT-GLAZE 4.7K JA 1/16W
R5431	401 224 8900	MT-GLAZE 100K JA 1/16W
R5432	401 261 2909	MT-FILM 5.6K DU 1/16W
R5433	401 224 8900	MT-GLAZE 100K JA 1/16W
		(CONNECTORS)
CN541	645 051 6238	SOCKET,FPC 14P (N.S.P)
CN542	645 034 8051	TERMINAL,EARTH (N.S.P.)

CIRCUIT DIAGRAMS & PRINTED WIRING BOARDS

TABLE OF CONTENTS

OVERALL WIRING & BLOCK DIAGRAMS Page

OVERALL WIRING C3
OVERALL CIRCUIT C4
CAMERA CIRCUIT C4
LENS CIRCUIT C5
MAIN CIRCUIT C5
SYSTEM CONTROL CIRCUIT C6
STROBO CIRCUIT C7
POWER CIRCUIT C7
IC501 BLOCK DIARAM C7

CIRCUIT DIAGRAMS

MAIN & LCD DRIVER CIRCUIT WAVEFORMS C7
CP1 BOARD (DMA) MAIN, LCD DRIVER & LENS C8
CP1 BOARD (CAA) CCD DRIVER C13
CP1 BOARD (SYA) SYSTEM CONTROL C14
ST1 BOARD STROBO C15
CP1 BOARD (PWA) POWER C16
TB1 BOARD SWITCH C19
TB2 BOARD SELF LED C19

PRINTED WIRING BOARDS (P.W.B.)

CP1 P.W.B. (SIDE A & B) C19
ST1 P.W.B. (SIDE A & B) C20
TB1 P.W.B. (SIDE A & B) C20
TB2 P.W.B. (SIDE A & B) C20

NOTES:

1. **All resistance values in "OHMS" unless otherwise noted. (K=1,000 ; M=1,000,000)**
2. **All capacitance values in "μF" unless otherwise noted. p=pico farad ; μ ,u or U=micro farad**
3. **All inductance values in "μH" unless otherwise noted. μ ,u or U=micro henry ; m=milli henry**

PRODUCT SAFETY NOTICE

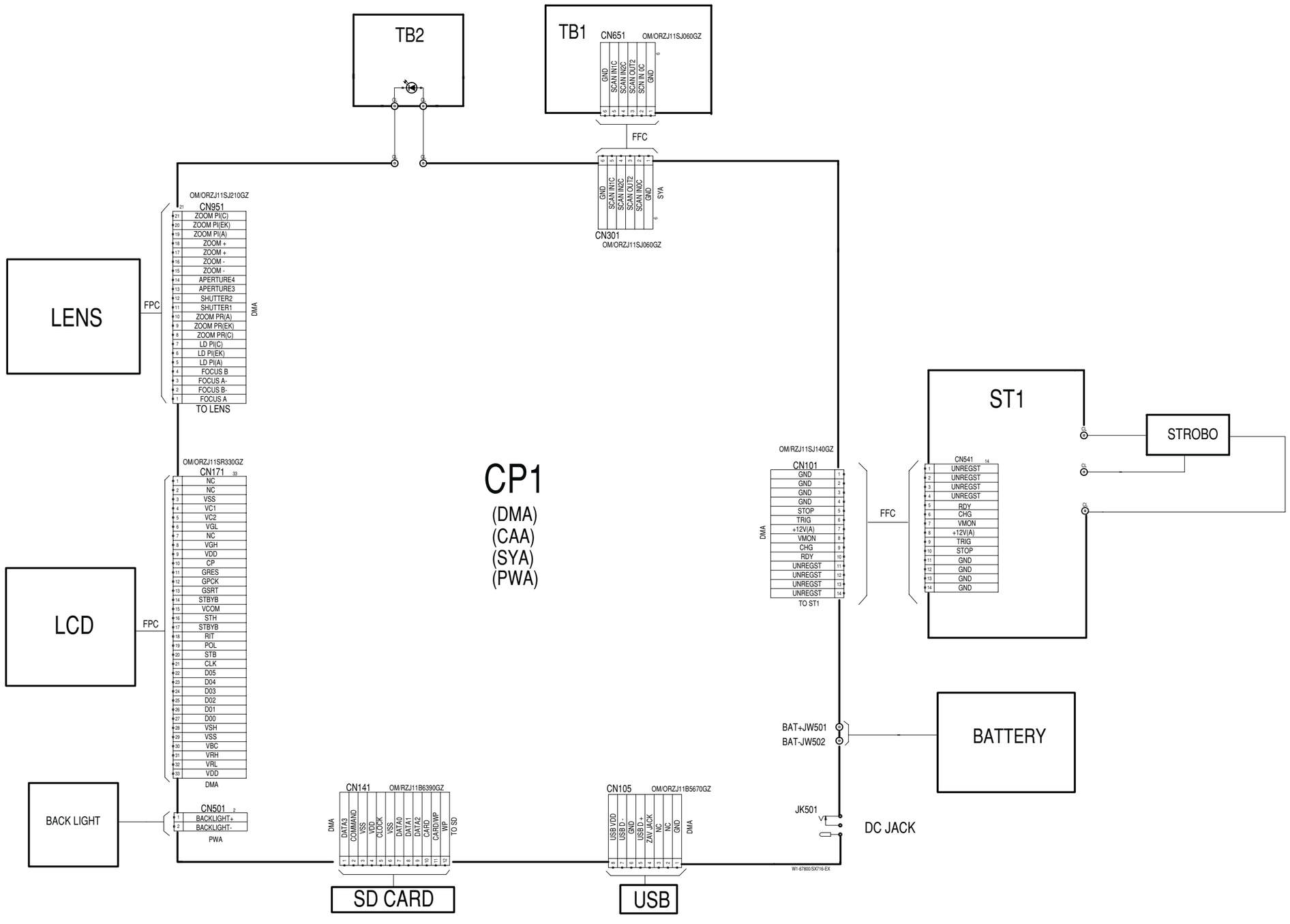
THE COMPONENTS DESIGNATED BY A SYMBOL (⚠) IN THIS SCHEMATIC DIAGRAM DESIGNATES COMPONENTS WHOSE VALUE ARE OF SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. SHOULD ANY COMPONENT DESIGNATED BY A SYMBOL NEED TO BE REPLACED, USE ONLY THE PART DESIGNATED IN THE PARTS LIST.
DO NOT DEVIATE FROM THE RESISTANCE, WATTAGE AND VOLTAGE RATINGS SHOWN.

EXPLANATORY NOTES (EXAMPLES)

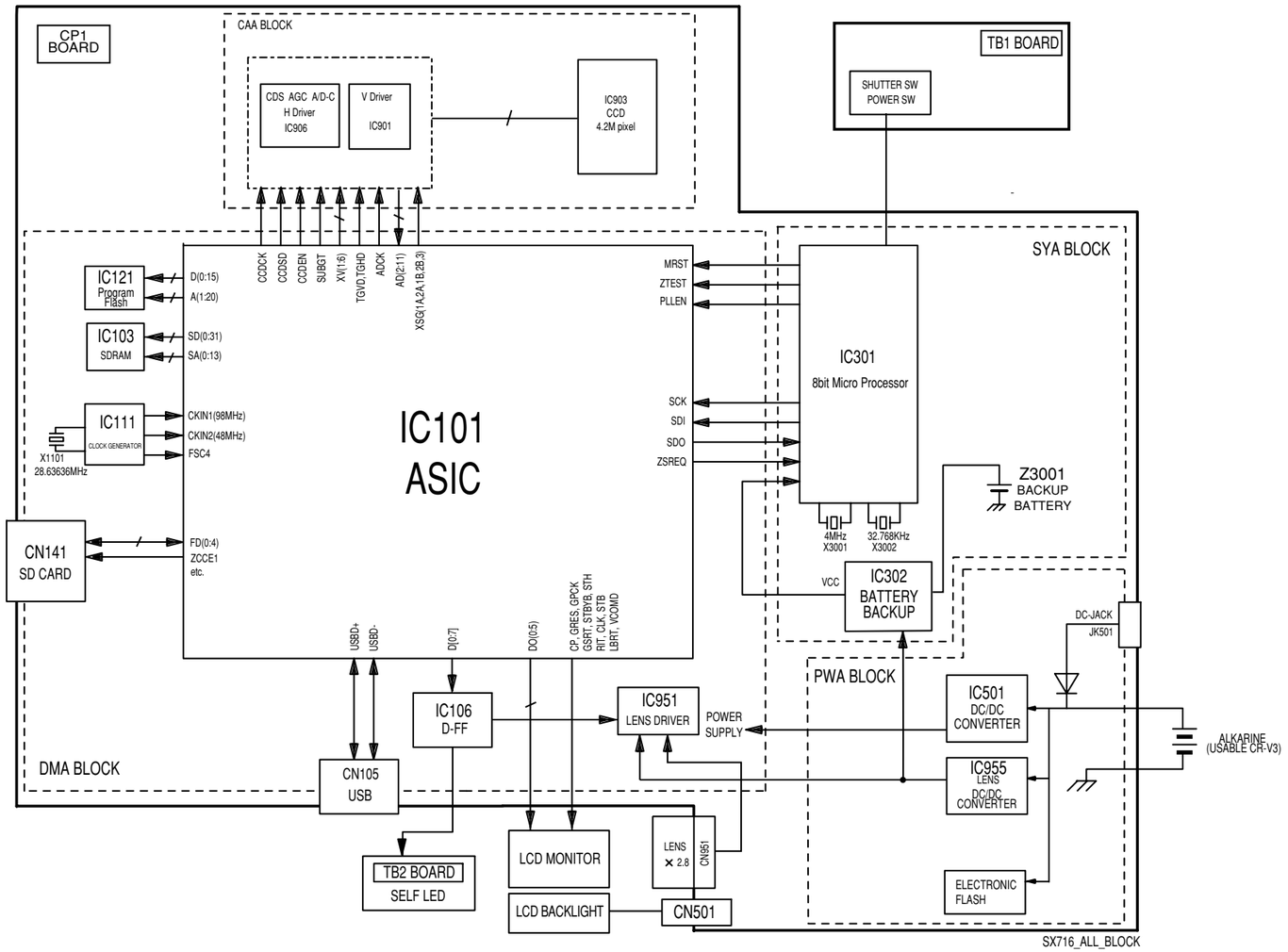
Resistor 10K:1/16J means 10kilo ohm ±5%, 1/16watt max.
1M:1/10K means 1mega ohm ±10%, 1/10watt max.
Capacitor 0.047:F means 0.047micro farad, Ftype.
Electrolytic capacitor
10:16 means 10micro farad, 16volt max.
Inductor 330:J means 330micro henry ±5%
470:K means 470micro henry ±10%
No description J or K means ±5%

PAL-C-EX

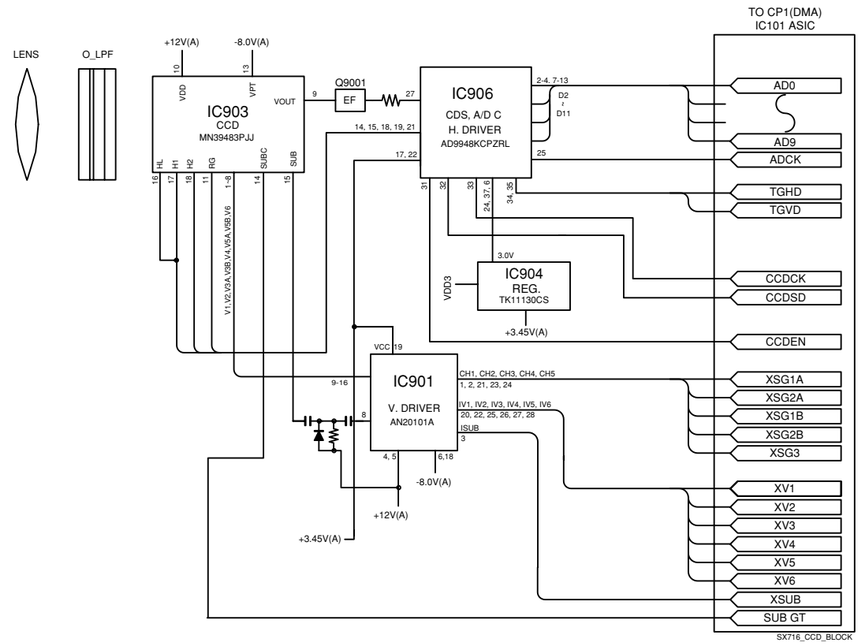
OVERALL WIRING



OVERALL CIRCUIT

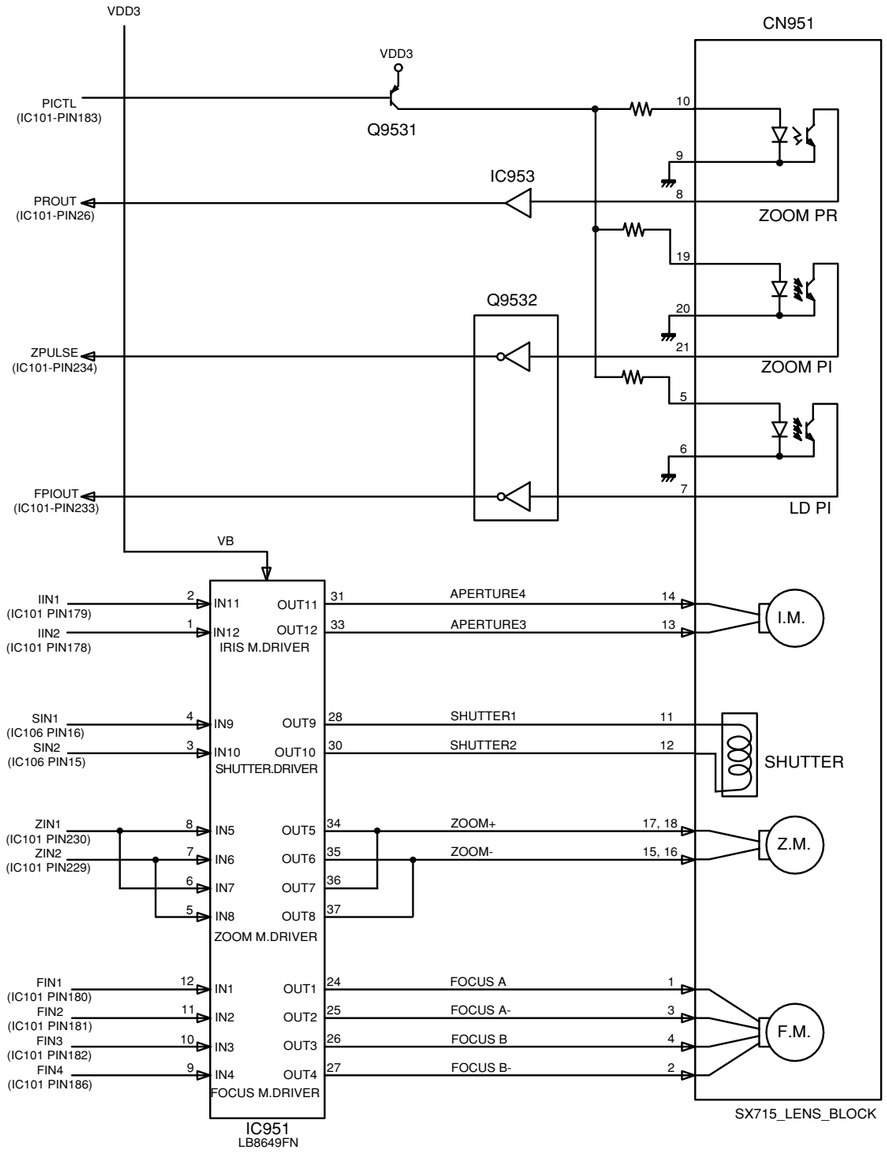


CAMERA CIRCUIT

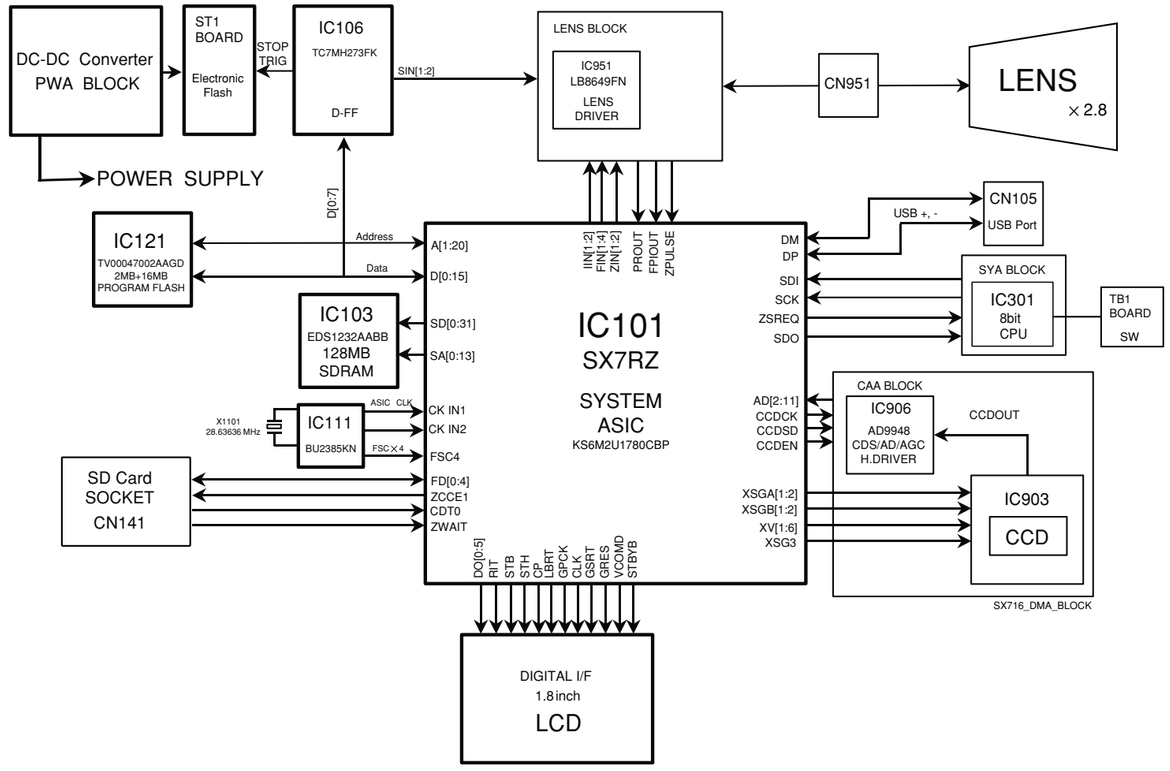


C4

LENS CIRCUIT



MAIN CIRCUIT



C5

SYSTEM CONTROL CIRCUIT

SYA

ALWAYS3.2V
BOOST3.6V
BACKUP 3.2V
IC303 RESET
NC
UNREG(S)
IC302
BATTERY BACKUP
AL3.2V
UNREG
VDD
RESET
LI BAT OFF
Q3003
BACK UP
Z3001
SW3.2V
Q3002
17 VDD
29 VDD
43 AVDD
25 RESET
12 BAT OFF
1 BATTERY
42 BACKUP CTL
44 AVref
40 AV REF ON
15 SCAN IN0
5 SCAN IN1
6 SCAN IN2
7 SCAN IN3
8 SCAN IN4
3 SCAN IN5
21 SCAN OUT0
20 SCAN OUT1
11 SCAN OUT2
10 LED.VF
Q3007
DRIVER
ALWAYS3.2V

SET	DC_IN	-	PLAY	VF	REC
UP	DOWN	RIGHT	LEFT	CARD	USB_CONNECT
PW_ON	1st	2nd	TELE	WIDE	MENU

IC301
8bit MICRO PROCESSOR

XCIN 24 — X3002 32KHZ
XCOUT 23
XOUT 26 — X3001 4MHZ
XIN 27
CHG ON 14 — CHG
VMONIT 2 — VMONIT
COMREQ 4 — COMREQ
PLLEN 38 — PLLEN
SREQ 13 — ZSREQ
SI 19 — SDO
SO 18 — SDI
SCK 16 — SCK
ASIC TEST 41 — ZTEST
MAIN RESET 39 — MRST
LCD ON2 31 — LCD_ON2
LCD_BL 35 — LCD_BL
P ON 32 — PON
PA ON 33 — PAON
LCD ON 34 — LCD ON
LCD ON3 36 — LCD ON3
PAON2 30 — PAON2

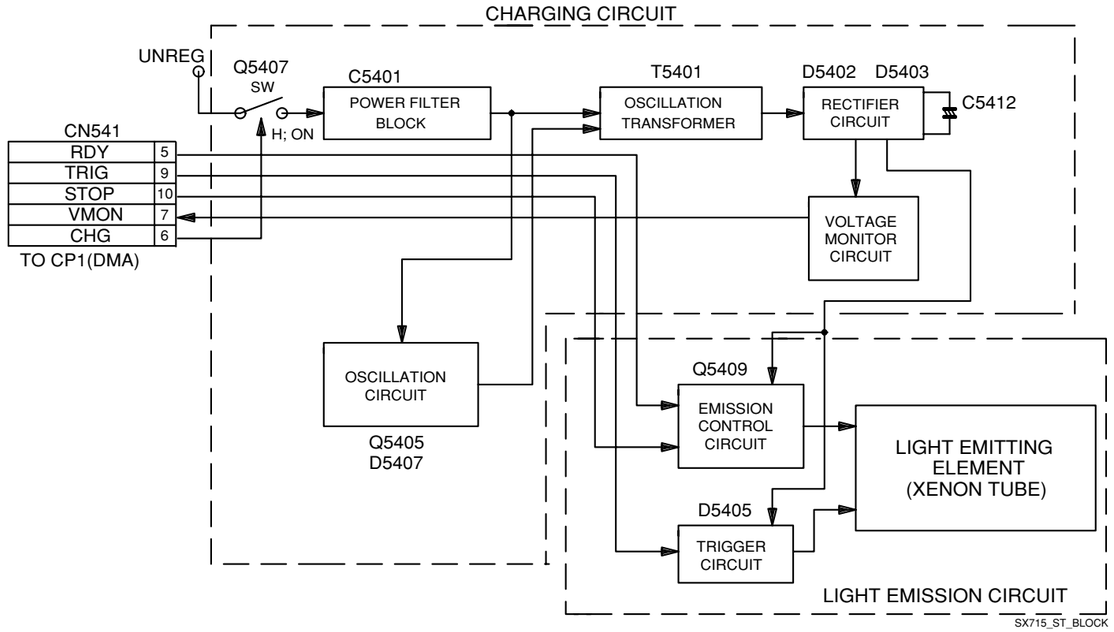
TO DMA
TO PWA

SX715_SY_BLOCK

C6

CIRCUIT DIAGRAMS

STROBO CIRCUIT



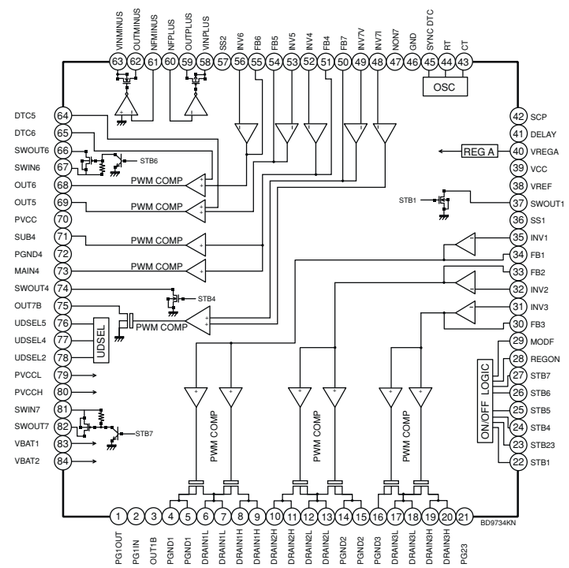
POWER CIRCUIT

MAIN & LCD DRIVER CIRCUIT WAVEFORMS

TEST POINT LOCATION	WAVEFORM	TEST POINT LOCATION	WAVEFORM
IC111 PIN 11 CLK1OUT 1V/div 4ns/div		CN171 PIN 10 CP 1V/div 20µs/div <LCD ON>	
IC111 PIN 16 CLK2OUT 1V/div 10ns/div		CN171 PIN 12 GPCK 1V/div 20µs/div <LCD ON>	
IC111 PIN 19 REFCLK 1V/div 20ns/div		CN171 PIN 20 STB 1V/div 20µs/div <LCD ON>	

WF-SX716

IC501 BLOCK DIAGRAM (BD9734KN)



CP1 BOARD (DMA) MAIN, LCD DRIVER & LENS

DMA(MAIN)

D1-078S05/S07/19-EX

VOLTAGE: VIEW MODE, LCD ON

IC101
ASIC SX7RZ
KS6M2U1780CBP
QXXAGM2U1780N

IC103
EDS1232AABB-75
BGA
128M(32)
SDRAM

IC121
TV0024700ZAASD000A
NOR
NAND
PROGRAM FLASH

IC140
TC7MH245FK
(2TC7MH245FK-P)
TRANSCEIVER

IC111
BU2385KN
CLOCK GENERATOR
(QBU2385KN--P

IC105
TC7MH273FK-P
(2TC7MH273FK-P)
D-FF

IC106
NJM2122F-TE1
(NJM2122F-P

IC172
NJM2122F-TE1
(NJM2122F-P

LENS DRIVER IC951
LB8649FN-TBM
(LB8649FN--P

DMA(LCD)

VOLTAGE: VIEW MODE, LCD ON

DMA(LENS)

CN141
1A1A1-1B0308W

1	DATA3
2	COMMAND
3	VSS
4	VDD
5	CLOCK
6	VSS
7	DATA0
8	DATA1
9	DATA2
10	CARD
11	CARD WP
12	WP

TO SD

CN171
1A1AJ11SR203G

1	NC
2	NC
3	VSS
4	VC1
5	VC2
6	VGL
7	NC
8	VGH
9	VDD
10	CP
11	GRES
12	GPCK
13	GSRT
14	STBYB
15	VCOM
16	STH
17	STBYB
18	RIT
19	POL
20	STB
21	CLK
22	D05
23	D04
24	D03
25	D02
26	D01
27	D00
28	VSH
29	VSS
30	VBC
31	VRH
32	VRL
33	VDD

TO LCD

CN951
1A1AJ11SJ21YG

20	ZOOM PI(C)
19	ZOOM PI(EK)
18	ZOOM PI(A)
17	ZOOM +
16	ZOOM +
15	ZOOM -
14	ZOOM -
13	APERTURE4
12	APERTURE3
11	SHUTTER2
10	SHUTTER1
9	ZOOM PR(A)
8	ZOOM PR(EK)
7	ZOOM PR(C)
6	LD PI(C)
5	LD PI(EK)
4	LD PI(A)
3	FOCUS B
2	FOCUS A-
1	FOCUS B-
0	FOCUS A

TO LENS

CN105

6	USB_VDD
5	USB D(-)
4	GND
3	USB D(+)
2	ZAV_JACK
1	NC
0	NC
	GND

TO USB
1AHA11B5670G

CN101
1AHA11B1340G

1	GND
2	GND
3	GND
4	GND
5	STOP
6	TRIG
7	+12V(1A)
8	VMON
9	CHG
10	RDY
11	UNREGST
12	UNREGST
13	UNREGST
14	UNREGST

TO ST1
CN541

TO PWA
TO CAA
TO SYA
TO LENS
TO MAIN
TO LCD
TO SD
TO USB

C8

CP1 BOARD (DMA) MAIN, LCD DRIVER & LENS [UPPER-LEFT]

DMA(MAIN)

D1-67800/SX716-EX

VOLTAGE: VIEW MODE, LCD ON

IC101
ASIC SX7RZ
KS6M2U1780CBP
QXXAGM2U1780N

TO PWA

TO CAA

TO SYA

TO LCD

TO LENS

TO LENS

TO LENS

VCOMD
TO LCD

1AV4J11SL140G
CN101
GND 1
GND 2

C9

CP1 BOARD (DMA) MAIN, LCD DRIVER & LENS [UPPER-RIGHT]

IC101
ASIC SX7RZ
KS6M2U1780CBP
QXXAGM2U1780N

DMA(LCD)
VOLTAGE: VIEW MODE, LCD ON

TO LCD

TO LENS

TO SD

TO MAIN

1AV4J11B6390M
CN141

1	DATA3
2	COMMAND
3	VSS
4	VDD
5	CLOCK
6	VSS
7	DATA0
8	DATA1
9	DATA2
10	CARD
11	CARD/WP
12	WP

1AV4J11SR333G
CN171 33

1	NC
2	NC
3	VSS
4	VC1
5	VC2
6	VGL
7	NC
8	VGH
9	VDD
10	CP
11	GRES
12	GPCK
13	GSRT
14	STBYB
15	VCOM
16	STH
17	STBYB
18	RIT
19	POL
20	STB
21	CLK
22	D05
23	D04
24	D03
25	D02
26	D01
27	D00
28	VSH
29	VSS
30	VBC
31	VRH
32	VRL
33	VDD

1AV4J11SJ211G
CN951 21

21	ZOOM PI(C)
20	ZOOM PI(EK)
19	ZOOM PI(A)
18	ZOOM +
17	ZOOM +
16	ZOOM -
15	ZOOM -
14	APERTURE4
13	APERTURE3
12	SHUTTER2
11	SHUTTER1
10	ZOOM PR(A)
9	ZOOM PR(EK)
8	ZOOM PR(C)
7	LD PI(C)
6	LD PI(EK)
5	LD PI(A)
4	FOCUS B
3	FOCUS A-
2	FOCUS B-
1	FOCUS A

IC172 NJM2125F-TE1

LENS DRIVER IC951 LB8649FN-TBM

IC953

C10

CP1 BOARD (DMA) MAIN, LCD DRIVER & LENS [LOWER-LEFT]

TO SYA

SCK
ZTEST
MRST
PLLEN
COMREQ
LCD_ON2
ZUSB_DET
ZCARD
CHG
VMONIT

1AV4J11SL140G
CN101

GND	1
GND	2
GND	3
GND	4
STOP	5
TRIG	6
+12V(A)	7
VMON	8
CHG	9
RDY	10
UNREGST	11
UNREGST	12
UNREGST	13
UNREGST	14

12.0
+12V(A)
VMONIT
CHG
UNREGST

TO ST1
CN541

TV00047002AAGD00GA
IC121

NOR

MRST
ZFWR
RY/BY
NC
RESET
WE
CE
OE
VCC
VSS
BYTE
A20 A19 A18 A17 A16 A15 A14 A13 A12 A11 A10 A9 A8 A7 A6 A5 A4 A3 A2 A1 A0
DQ15/A-1 DQ14 DQ13 DQ12 DQ11 DQ10 DQ9 DQ8 DQ7 DQ6 DQ5 DQ4 DQ3 DQ2 DQ1 DQ0
ZCS0
ZFRD
D15 D14 D13 D12 D11 D10 D9 D8 D7 D6 D5 D4 D3 D2 D1 D0
R1201 10;1/16J
R1410 10K;1/16J
R1411 2.7K;1/16J
C1249 0.1B

NAND

R/Bn
REn
CEn
VCCn
VSS
CLE
ALE
WEn
WPn
IO1 IO2 IO3 IO4 IO5 IO6 IO7 IO8
NC
PROGRAM FLASH

RB143 100
RB144 100
CRZB1
ZIORD
ZSCE
ZREG
CA0
ZIOWR
ZSWP

IC141
TC7MH245FK
QTC7MH245FK-P
TRANSCEIVER
DIR
FD0 FD1 FD2 FD3 FD4 FD5 FD6 FD7
C1045 0.1B
C1304 0.1B

IC103
EDS1232AABB-75

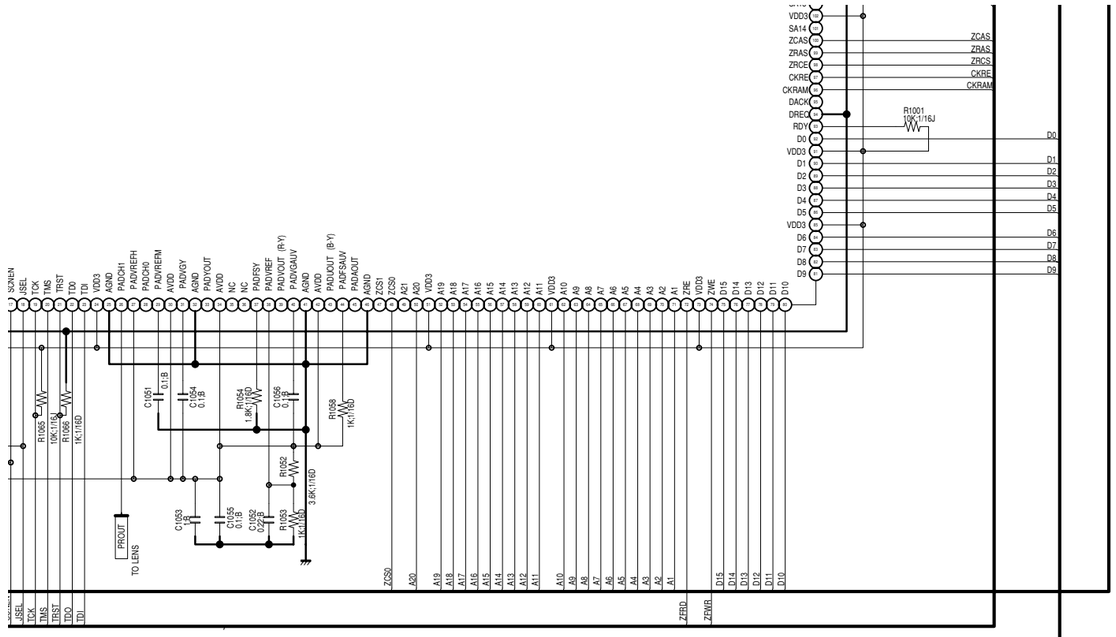
BGA
128M(32)
SDRAM

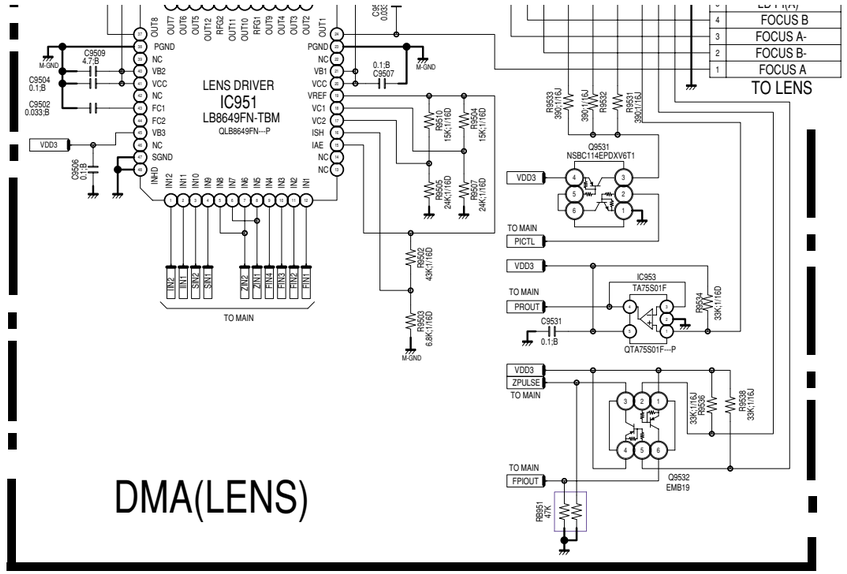
SD2 SD0 SD4 SD3 SD1 SD5 SD6 SD7
DQM0 ZRWE ZCAS ZRAS ZRCS SA13 SA11 SA12 SA1 SA0 SA10 DQM2 SA2 SD16 SD18 SD17 SD20 SD22 SD19 SD21 SD23
DQ2 DQ0 VDD DQ4 VSSQ VDDQ DQ3 DQ1 DQ5 DQ6 VSSQ DQ7 VDD DQM0 ZWE ZCAS ZRAS ZCS BA0 A11 BA1 A1 A0 A10 DQM2 A2 VSSQ DQ16 NC VDDQ DQ18 DQ17 VDDQ DQ20 DQ22 DQ19 VSSQ VDDQ DQ21 DQ23 VDD
SD13 SD15 SD11 SD12 SD14 SD10 SD9 SD8 DQM1 CKRAM CKRE SA9 SA7 SA8 SA4 SA5 SA6 DQM3 SA3 SD31 SD29 SD30 SD27 SD25 SD28 SD26 SD24
DQ13 DQ15 VSS DQ11 VDDQ VSSQ VSSQ DQ12 DQ14 VSSQ DQ10 DQ9 VDDQ DQ8 VSS DQM1 NC NC CLK CKE A9 A7 A8 NC A4 A5 A6 VSS DQM3 A3 VDDQ DQ31 NC VSSQ DQ29 DQ30 VSSQ DQ27 DQ25 DQ28 VDDQ VSSQ DQ26 DQ24 VSS

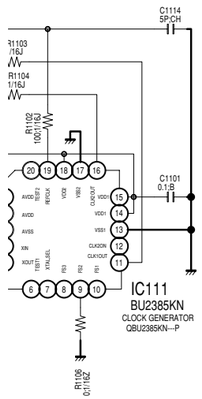
L1072 FBMH1608HL601-T
L1071 FBMH1608HL601-T
C1074 0.1B
C1075 0.1B
C1076 0.1B
C1077 0.1B
C1071 4.7;B
XF107 CKD610JB0J225MT
VDD3

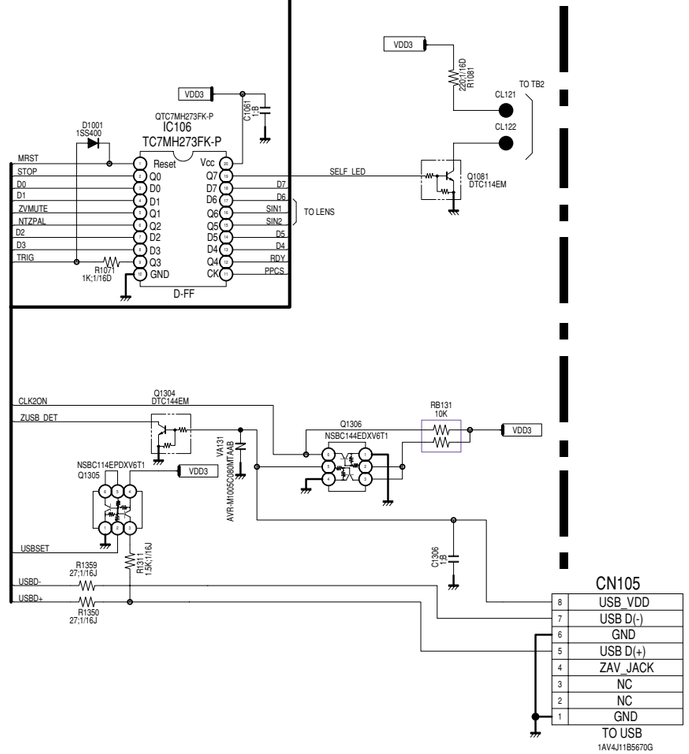
PLLEN
VDD1.8
C1041 0.1B
PLL_GND PLLEN VDD1 VDD1 VDD1 VDD1 GND GND GND

CP1 BOARD (DMA) MAIN, LCD DRIVER & LENS [LOWER-RIGHT]

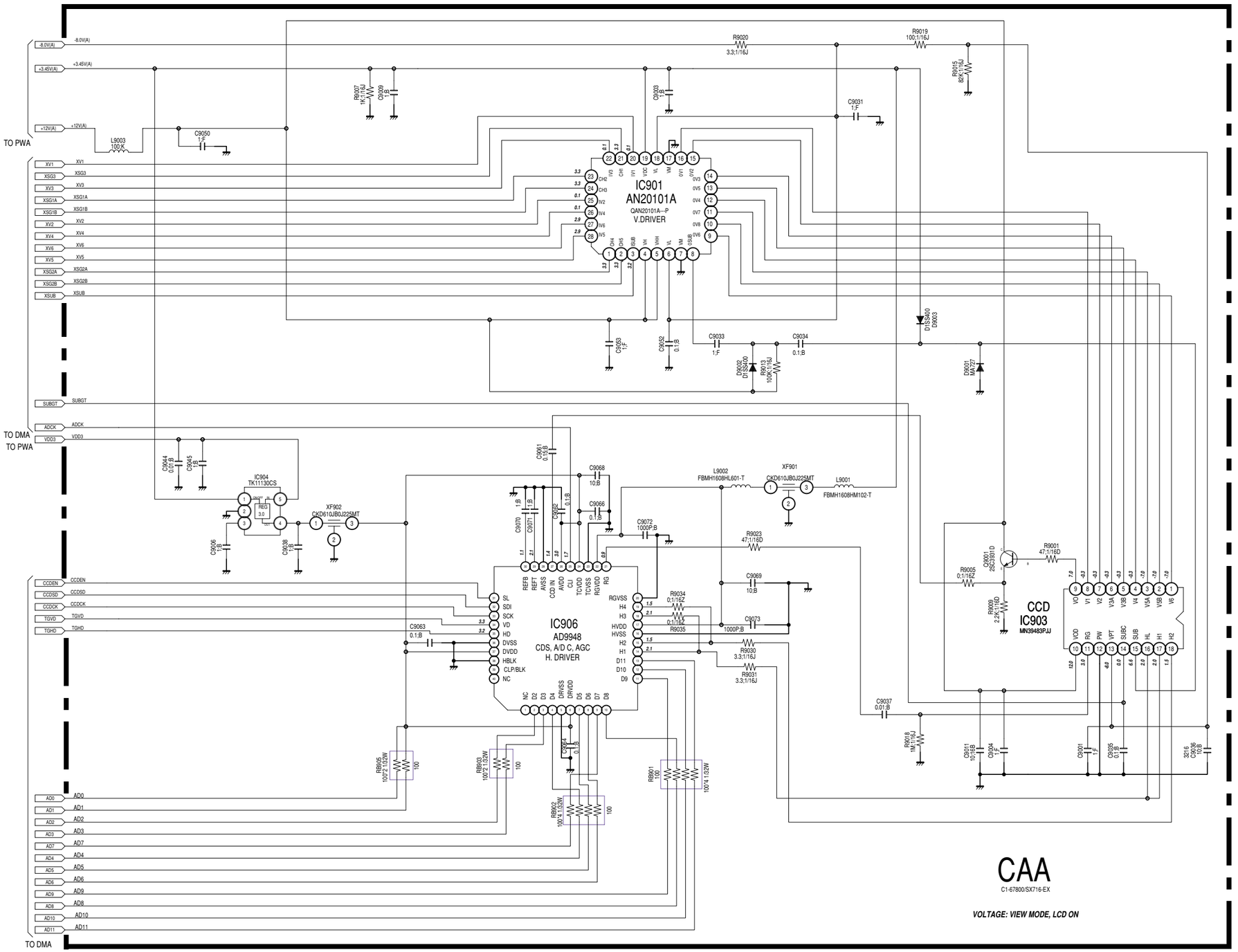








CP1 BOARD (CAA) CCD DRIVER



C13

CP1 BOARD (SYA) SYSTEM CONTROL

SCAN IN / SCAN OUT	0	1	2	3	4	5
0	SET	DC_IN		PLAY	VF	REC
1	UP	DOWN	RIGHT	LEFT	CARD	USB_CONNECT
2	PW_ON	1st	2nd	TELE	WIDE	MENU

IC303 S80815CNNBGJ
RESET
BACKUP3.2V
ALWAYS3.2V
SW3.2V
IC302 S8424BAA
BATTERY BACKUP
OMORS008X1SKDZ
IC301
UPD789166GB-697-8ES-
8bit MICRO PROCESSOR
SYA
Y1-67800/SX716-EX
VOLTAGE: VIEW MODE, LCD ON
TO PWA
TO DMA
CN301
OMORZJ11SJ060GZ
1AY4J11SL060G
TO TB1
CN651
S3001 SSSS810301
1SS400
EMP11
LEFT S3002 LS15Z2
UP S3003 LS15Z2
DOWN S3004 LS15Z2
RIGHT S3005 LS15Z2
MENU S3006 LS15Z2
SET S3007 LS15Z2
TELE S3008 LS15Z2
WIDE S3009 LS15Z2
PLAY
VF
REC

ST1 BOARD STROBO

STROBO UNIT
FLASH REFLECTOR

PINK W1400
XAN
GRAY W1600
TRG
BLACK W1500
XKT

T5402
1AV4L17B0160N

290

C5410 0.047;350H (K)
C5411 0.01;630H (K)
R5422 220K:1/8J-X
R5417 10M:1/8F-X
D5403 CRG02
D5402 F1P8
D5405 CR05BS-8
C5412 120U:300V CEXAG565121AN
D5404 OMC01
R5405 100K:1/8J-X
R5404 220:1/16J
C5409 0.033;F
R5418 56:1/16J
R5419 82K:1/16D
R5420 10K:1/16D
C5404 1000P:B

1AV4L17B0220G
T5401

C5403 0.047;B 16V
R5406 150:1/16J
R5408 180:1/16J
R5409 2.2K:1/16J
Q5407 3LN01S
R5414 1K:1/16J
CHG
Q5405 CPH5504
C5401 330:3.3V
C5407 6800P:B
C5413 6800P:B
D5407
DAN222
C5406 0.01:B
R5413 10K:1/16J

R5423 33:1/16D
Q5409 CY25BAJ-8F
R5426 470K:1/16J
D5408 RB521S:30

R5401 1K:1/16J
Q5402 DTC114EM
R5429 6.2K:1/16D
Q5401 DTC123JE

VCC
STOP
TRIG
GND
VMONIT
+15.5V(A)

R5432 5.6K:1/16D
R5431 100K:1/16J
R5433 100K:1/16J
C5420 4700P:B
R5430 4.7K:1/16J
Q5410 2SA1745
Q5411 DTC144EE

ST1
S1-67800/SX716-EX
VOLTAGE: AFTER CHARGE

1AV4J30B1071G
CN542

1	GND
2	GND

1AV4J11SL140G
CN541

1	UNREGST
2	UNREGST
3	UNREGST
4	UNREGST
5	RDY
6	CHG
7	VMON
8	+12V(A)
9	TRIG
10	STOP
11	GND
12	GND
13	GND
14	GND

TO CP1(DMA)
CN101

CP1 BOARD (PWA) POWER

DC JACK
JK501
1AV4J11B2720N
HEC3600-010010

IC501
BD9734KN
QBD9734KN—P
SWITCHING MODULE

IC502
QTK11134CS-J
TK11134CS

T5001
1AV4L51B6140G

Q9551
FDC633N
TFDC633N—K

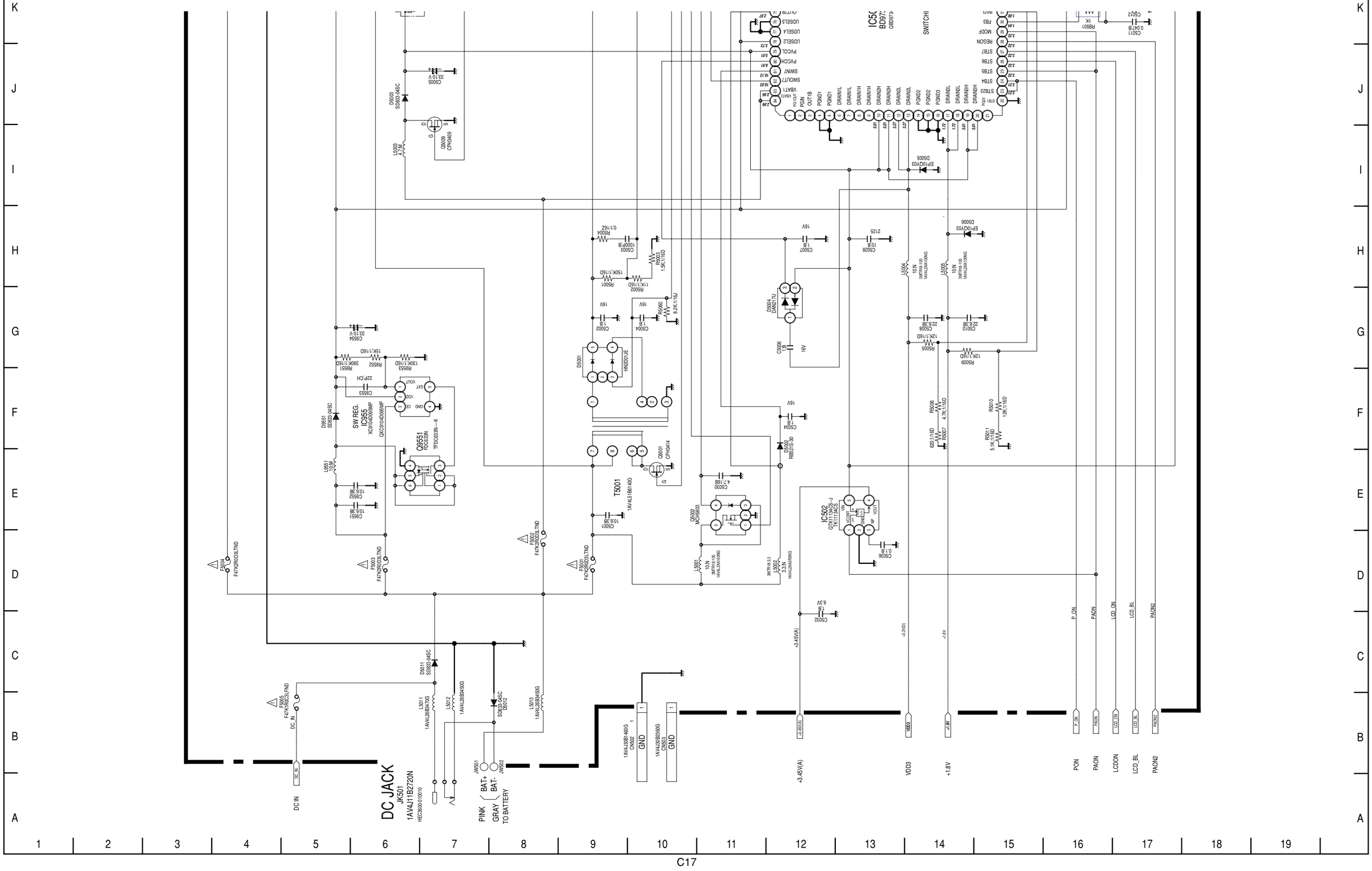
SW REG.
IC955
XC9104D095MP
QXC9104D095MP

PWA
P1-67800/SX716-EX

VOLTAGE: VIEW MODE, LCD ON
UNREG 3V

C16

CP1 BOARD (PWA) POWER [LEFT]



C17

CP1 BOARD (PWA) POWER [RIGHT]

UNREGST
GND
BOOST3.6V
UNREG (S)
+15V(L)
+12V(A)
1:AVAUNIC0203 2:BS
BACKLIGHT+
BACKLIGHT-
TO LCD BACK LIGHT
-8.0V(A)
+5V(L)
LCDON3

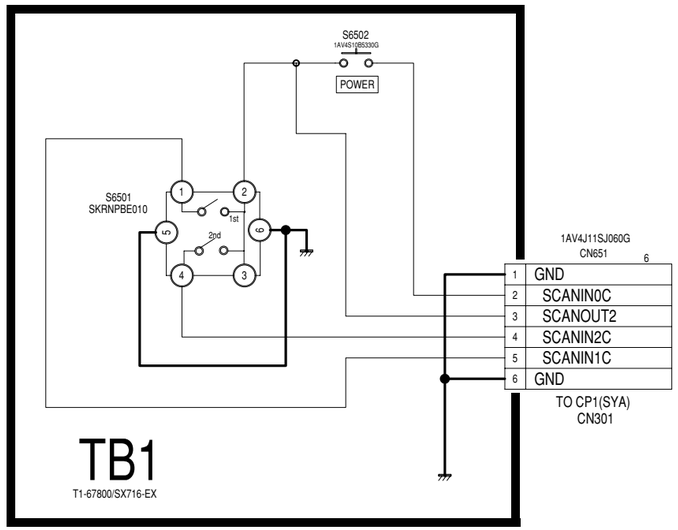
PWA
P1-6780XSX716-EX
VOLTAGE: VIEW MODE, LCD ON
UNREG 3V

IC501
BD9734KN
QBD9734KN--P
SWITCHING MODULE

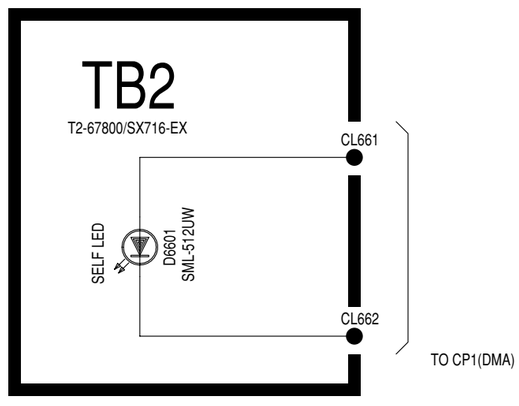
| | | |

PRINTED WIRING BOARDS (P.W.B.)

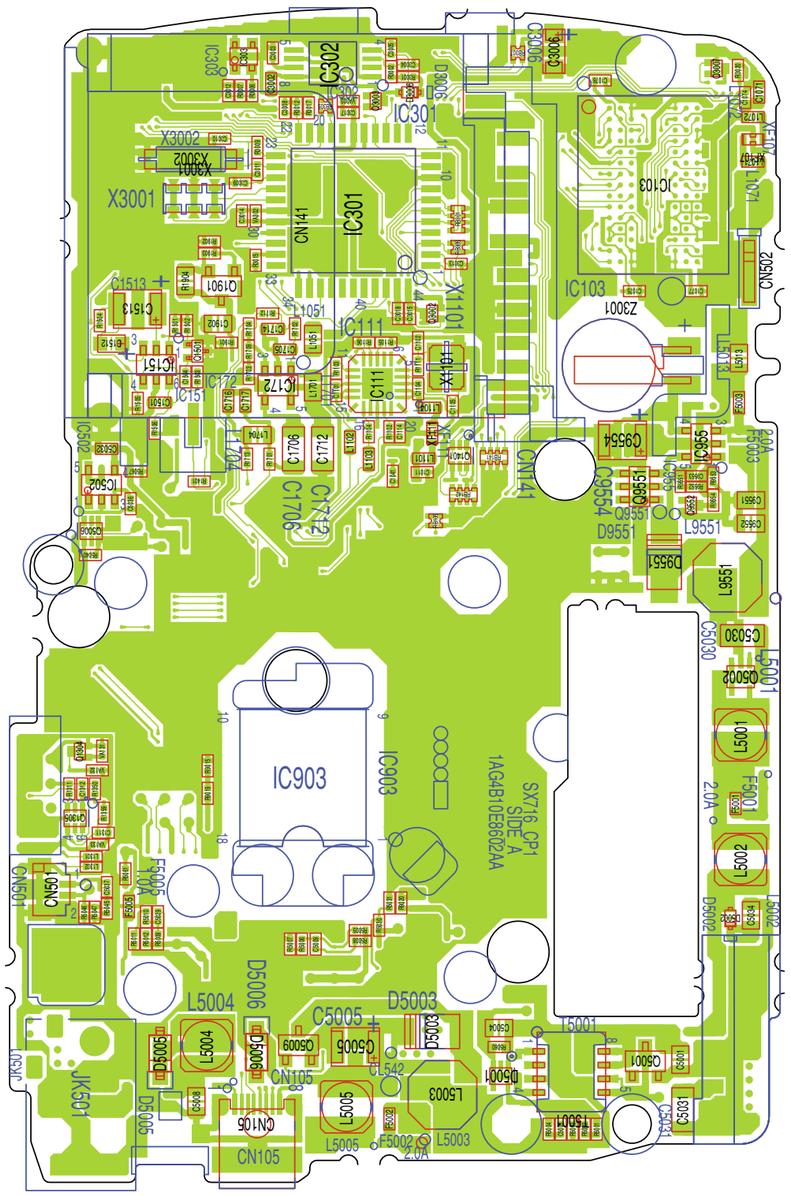
TB1 BOARD SWITCH



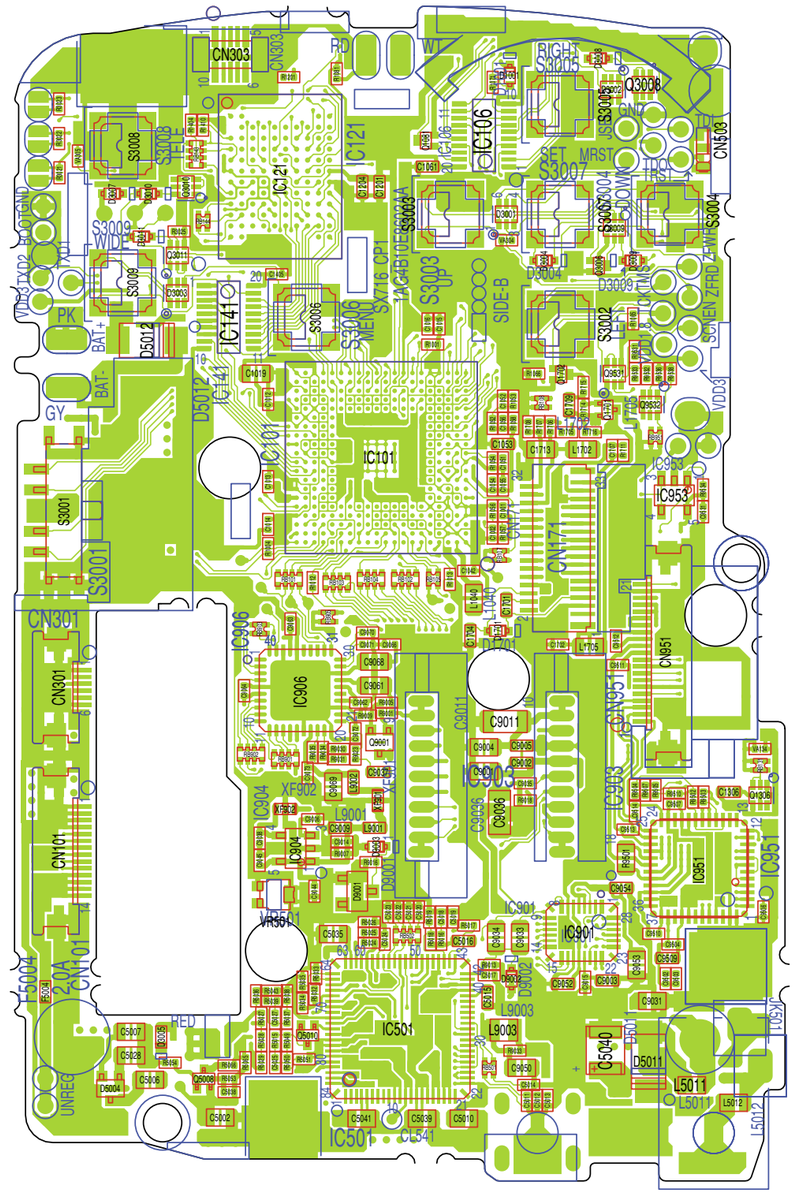
TB2 BOARD SELF LED



CP1 P.W.B. (SIDE A)

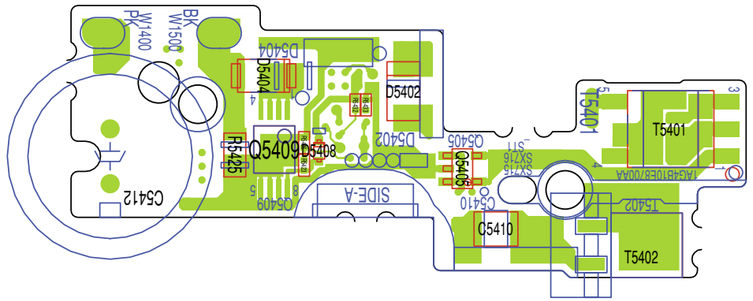


CP1 P.W.B. (SIDE B)

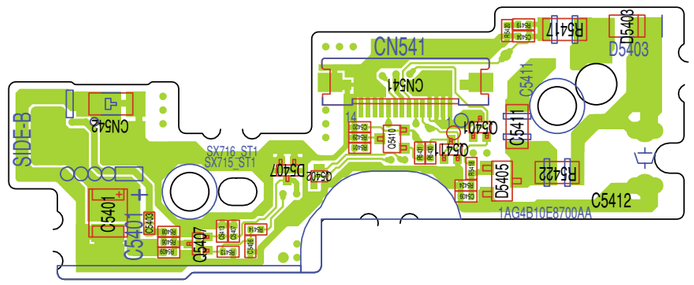


C19

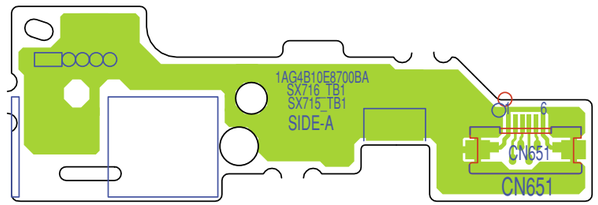
ST1 P.W.B. (SIDE A)



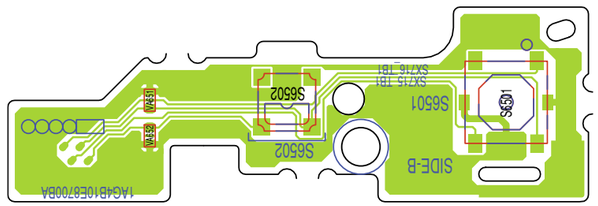
ST1 P.W.B. (SIDE B)



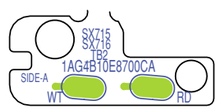
TB1 P.W.B. (SIDE A)



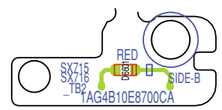
TB1 P.W.B. (SIDE B)

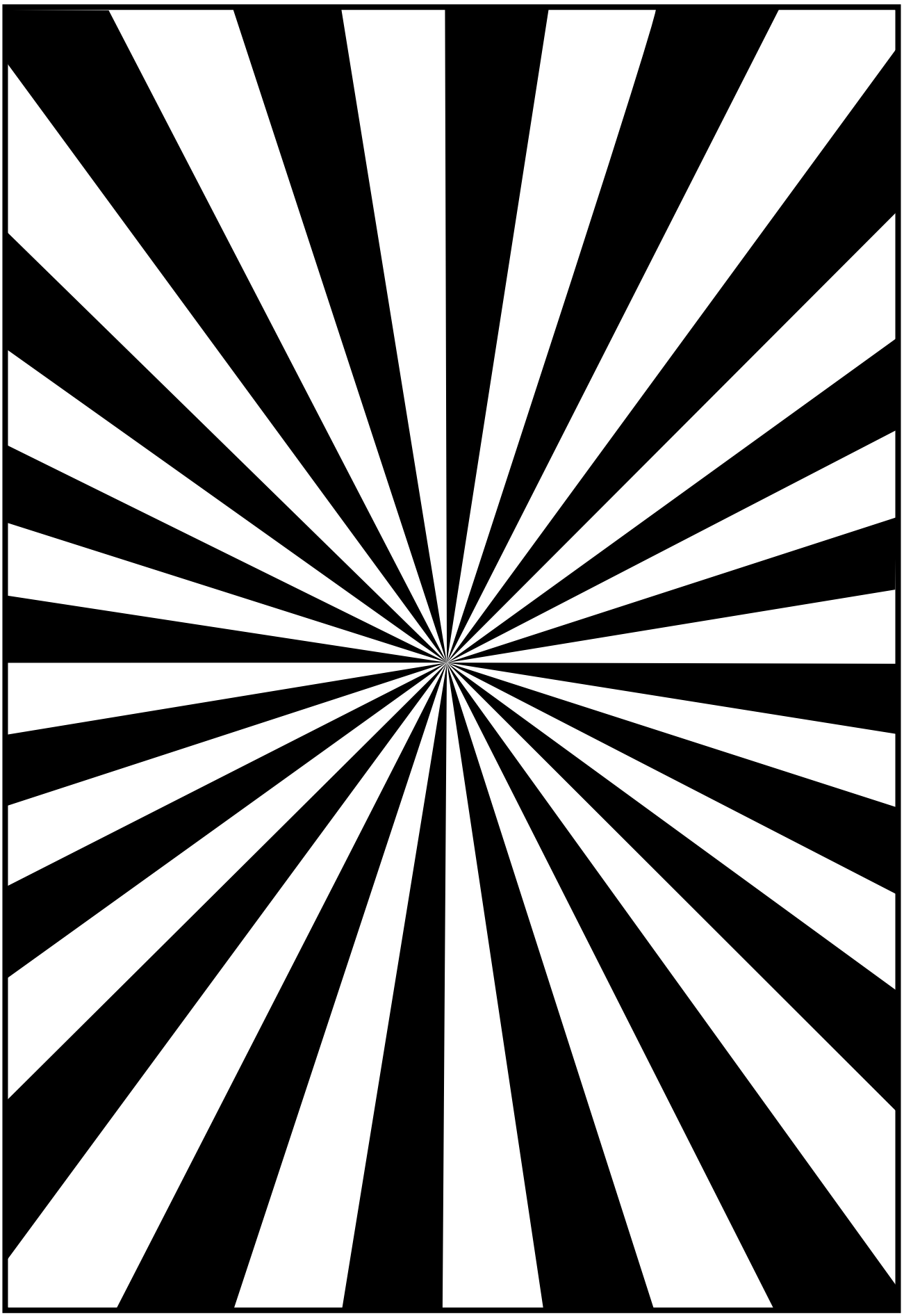


TB2 P.W.B. (SIDE A)



TB2 P.W.B. (SIDE B)





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Osaka, Japan

Jun./'04